A Short Compendium OF CHIRURGERY:

CONTAINING ITS

GROUNDS & PRINCIPLES,

More particularly Treating of *Impostumes, Wounds, Ulcers, Fractures,* and *Dislocations.*

ALSO

A *Discourse* of the *Generation* and *Birth* of MAN, very necessary to be understood by all *Midwives* and *Child-bearing Women.*

WITH

The *Several Methods* of Curing the *French Pox:* The Cure of *Baldness, Inflammation of the Eyes,* and *Toothach:* And an Account of *Blood-letting, Cup-setting,* and Blooding with *Leeches.*

The Second Edition.

To which is added,

The Art of *Rouling* and *Bolstring:* As it is Taught by the best *Masters* at *Paris,* and other Places beyond *Sea.*

By *J. S.* M. D.

LONDON, Printed by *A. G.* and *J. P.* and are to be Sold by *Charles Blount,* at the *Catherine wheel* near *Charing Cross.* 1683.

The first Edition in 1678

MVSEVM
BRITAN
NICVM

The Preface.

Courteous Reader,

MY Parents having ever destined me to be a Practical Physitian, thought fit to make me begin the Studies thereof by learning *Chirurgery*, probably thinking I might thereby acquire a better knowledge of Mans Body, and its several parts, together with their Functions, as also its outward (at least) Indispositions and Cures, than by only reading such Treatises of *Physiologie* as were then extant, which *Modern Anatomists* and other *Authors* have since found defective.

But in the performance of their just desires I found no small inconveniency, for want of some short and compendious Principles, that might give me the Grounds, and an *Idea* of that Art, proportionable to my then mean Capacity, almost frighted with the bulk of large and ill digested Volumes; but there being no Remedy, I was fain to compile out of them this small Treatise, which I have since reviewed, altering some obsolete Theorems into new ones, and adding some small Agreements to render its Reading less tedious; And all for my own use without any thoughts of ever troubling the Press therewith. These late years having brought forth several short Treatises of *Chirurgery*, specially the excellent Principles

of *Barbetty* and *Hornius*, the former whereof is lately made *Engliſh*: but finding in mine ſome things, which are purpoſely omitted in theirs, as few diſlike their own Productions, I have reſolved to make this ſhort *Compendium* Publick, wiſhing that it may be to the advantage of young Beginners in *Chirurgery*, and to the Health and Welfare of their Patients.

Thine J. S.

The CONTENTS.

CHAP. I.

Chirurgery defin'd, pag. 2. *Its Operations*, 3. *Of Temper or Complexion*, 7. *Of the Humours of the Body*, 10. *The Soul defin'd*, 25. *Of Diet*, 37. *Of Sleep and Dreams*, 40. *Of the Passions*, 42. *A Disease defin'd*, 45.

CHAP. II. *Of Impostumes.*

Their Causes and Matter, pag. 53, 54. *Their Prognostiks*, 56. *A Cataplasm to discuss an Impostume*, 57. *To resolve an Impostume*, 68. *To bring an Impostume to Suppuration*, ibid. *To mitigate the intense pain of an Impostume*, ibid.

CHAP. III. *Of Wounds.*

Signs of a Wound that has pierc'd the Skul, 65. *Whether a Wound has penetrated the Thorax*, ibid. *When the Lungs are hurt*, ibid. *When the Heart, Diaphragm, Great Artery or* Vena-Cava, Medulla-Spinalis, *Liver, Stomach, Guts, Kidneys, Bladder, and Ureters*, 66, 67. *When the Womb and*

and Nerves, 67, 68. *Of Wounds that are mortal*, ibid. *To help the Extraction of Bullets, Darts, &c. a Receipt*, 69. *Of Sutures*, 71. *A Receipt to prevent a too great Flux of Blood*, 72. *A Receipt to remove pain from the wounded part*, 73. *An excellent* Narcotick *for the same*, 74. *For Convulsions in the wounded*, 75. *A Palsy defin'd and cur'd*, 77. *Of the Cure of Wounds made by Fire-Arms*, 80. *A Receipt to bring them to Suppuration*, 81. *The Definition of a Gangrene*, 82. *Its Cause and Cure*, 83.

CHAP. IV. *Of Ulcers.*

WHat they are, 86. *Of the several sorts of Ulcers*, 88, 89. *Of the Cure of Ulcers*, 90, 91.

CHAP. V. *Of Fractures and Dislocations.*

WHat a Fracture is, 92. The Cure how perform'd, 95.

CHAP. VI. *Of the Generation and Production of Man.*

OF the Matter of Generation, 98. Of the Place, 99. The chiefest and surest

ſureſt Signs of Conception, 100. *To know whether the Child be Male or Female*, 101. *The Signs of approaching Child-birth*, ibid. *Directions to be obſerved before the Birth*, 102. *Directions to be obſerved in the Birth*, 103. *A Liniment to be uſed*, 104. *An excellent Powder to haſten Child-birth*, 105. *Directions to be obſerv'd when the Child is dead in the Womb*, 108. *An Ointment for the* Hypogaſter, 110. *For the Expulſion of Wind, an excellent Powder*, 111. *To ſtanch Milk, an infallible Receipt*, 112.

CHAP. VII. *Of the French Pox.*

ITs Definition and Signs, 114, 115. *Of its Cure*, 1. *By Decoction*, 116. *To make that Decoction*, ibid. 2. *By Plaiſters*, ibid. 3. *By Unction*, 117. *To make the Unction*, ibid. 4. *By Suffumigation*, 121. *The Method to be uſed in it*, ibid.

CHAP. VIII. *Of ſeveral other Indiſpoſitions cured by Chirurgery.*

OF Baldneſs and its Cure, 123. *Inflammation of the Eyes*, 124. *Tooth-ach*, ibid. *Phlebotomy*, 125. *Cup-ſetting*, 126. *Leeches*, 127.

A SHORT Compendium OF CHIRURGERY.

CHAP. I.

THAT part of Physick, which is called in Greek *Therapeutick* is divided into three others; namely, *Diet*, *Chirurgery* and *Pharmacy*: Yet, although this division be needful, these three Sisters, as the Graces, are so connexed and linked together, that it is almost impossible for any of them to perform the least operation, without the help of the two others; but

when they conspire and are together carefully reduced, in act; a most advantagious harmony, for the preserving and restoring of health, doth result of their mixture.

Amongst these parts of Physick, *Chirurgery* is the needfullest, and is therefore by some esteemed the noblest, as being the most ancient and profitable. It is defined, An Art consisting in a methodical application of the Hand on the Body of Man, for the preserving of its present Health, or the restoring of it, being lost. Its Subject is the same Body, and its End the Health of it.

The words *Etymologie* is composed of the Greek word *Cheir*, that signifieth *Hand*, and *Ergia*, *Operation*; which being joyned together make, as it were, a *Handy* or *Manual Operation*.

Χειρ. Manus. Ἐργία. Operatio.

The whole Art is divided into the *Theoretical* and *Practical* part; the First whereof is described the seconds Guide and Leader, because it contains the *Theorems*, *Demonstrations* and *Precepts* of it, which the Practical part only reduceth in act, and nevertheless hath been so much esteemed, that the Heroes and De-

my

my-gods of Antiquity did not disdain to learn it, for it is, as *Vincianus* saith.

Quod Natum Phœbus *docuit, quod* Chyron Achillem;
Quod didicere olim Podalirius *atque* Machaon.

What *Phœbus* taught his Son, *Chyron Achilles*,
What learned *Machaon* and *Podalirius*.

The operations of it are three, *Synthesis*, *Diairesis* and *Exeresis*; whereof the first joynes what is separated. The second, separates what is joyned. And the third, takes away what is superfluous. And these Operations are to be soon, surely, and pleasantly performed, with Manual or Medicinal Instruments, according to certain Indications drawn from the things, 1. *Natural.* 2. *Not-natural.* 3. And against *Nature.*

Chirurgery is soon performed, when no occasion of doing the sick person good is neglected. *Surely*, if using of known Remedies, we prevent a relapse, and avoid all worse diseases than the former. And

Pleasantly, if, amongst Remedies, those are first made use of, wherewith we may obtain our ends, with less molestation of the Patient.

Those things are called *Natural*, which do enter in the composition of mans Body, and although its first ingredient may be the universal matter of *Cartesius*, out of whose particles, variously figurated and moved, according to the variety of their figures and motions, those bodies do arise which though they be not the very first, nor can be demonstrated absolutely simple in their dissolution, yet because they are of the first order of sensible Bodies, whereof others are composed, they may commodiously, by a Chirurgion, who is an Artist of sensibles, be conceived in the Body of Man as its 1. *Elements*, whence do arise its 2. *Tempers* or *Complexions*. 3. *Humours*. 4. *Parts* or *Limbs*. 5. *Faculties*. 6. *Actions*. And 7. *Spirits*. Whereunto, 1 *Age*. 2 The *Sex*. 3 *Colour*. 4 *Commoderation*. 5 The *Season* of the *Year*. 6 The *Clime*. 7 And *manner of Living* are annexed.

Elements are single Bodies, out of which the mixt are composed, and into which

which they may be resolved, but they in none of a singler composition. They are reckoned four. 1 *Fire*, 2 *Air*, 3 *Water*, 4 And *Earth*, Whose number and station, *Ovid* hath thus expressed.

Quatuor Æternus Genitalia corpora Mundus
Continet, ex illis, duo sunt oneroſa, ſuoque
Pondere in inferius, Tellus atq; Unda ferun-
tur:
Et totidem gravitate carent, nulloque pre-
mente,
Alta petunt Aer, atq; aere purior Ignis.

That is,

The Eternal World four Bodies comprehends
Engendring all, The heavy *Earth* descends,
And *Water* clog'd with weight; Two light aspire,
Depress'd by none, pure *Air*, and purer *Fire*.

Which the Antient thought to evince by the Argument of mixt Bodies dissolution, Thus given by *Dubartas*.

Cela se voit a loeil dans le brulant Tison,
Son feu court vers le Ceil, sa natale Maison,
Son air vole en fumé, en cendre chet sa terre,
Son eau boult dans ses nocuds, &c.

That is perfectly seen, when burning wood doth send
Its *Fire* to heaven, the place from whence it did descend;
Its *Air* then flies in smoak, its *Earth* in ashes falls,
In its knots *Water* boyls, *&c.*

But the weakness of this Argument is plainly discovered by the learned *Boyle* in his *Chymista Scepticus*; so that, as we said before, These *Elements* can at most be reckoned but amongst the first Classes of mixt Bodies.

The *Elementary* qualities are also four, Namely, 1 *Heat.* 2 *Coldness.* 3 *Moisture.* 4 *Driness.* Whereof the two first (though all act in some measure) compared to the latter, are called *Active*; the two others *Passive.*

1. *Fire*, is of a hot and dry quality.
2. *Aire*, of a hot and moist.
3. *Water*,

3. *Water*, of a moiſt and cold.

4. And *Earth*, of a cold and dry.

Temper or *Complexion*, is a proportion of the four primary Qualities, ariſing from the mixture of the *Elements*. But if we conſider the univerſal matter, it may be defined, A moderation of the Particles endued with contrary Qualities. There are four ſingle Tempers. 1 *Hot*. 2 *Cold*. 3 *Moiſt*. 4 *Dry*. And four compos'd, 1 *Hot* and *Moiſt*. 2 *Hot* and *Dry*. 3 *Cold* and *Moiſt*. 4 *Cold* and *Dry*. Whereunto is added another, called in *Greek* ἴυκρατον, that is, *Temperate*, which is diſtinguiſhed, 1. In a *Temper* accrording to *weight*, when the *Elements* are both in *maſs* and *quality* ſo proportioned, that none can be ſaid to predominate. 2. And in another according to *juſtice*, which conſiſteth in a *temperature* convenient for the exerciſing of all neceſſary actions.

This *Temper* is either of the whole body, by reaſon of which Males are ſaid to be hotter then *Females*, or of the ſeveral parts, whoſe Rule is this, whatſoever is *Red* in the Body is *Hot*; whatſoever is *White*, *Cold*; that which is *Soft*,

is *Moiſt*; and that which is *Hard*, *Dry*. Whence it follows, That whatſoever is *Red* and *Hard*, is *Hot* and *Dry*, as the *Heart*; whatſoever is *Red* and *Soft*, is *Hot* and *Moiſt*, as the *Fleſh*; What is *White* and *Hard*, is *Cold* and *Dry*, as the *Bones*; and what is *White* and *Soft*, is *Cold* and *Moiſt*, as the *Brains*.

Childhood, comprehending the firſt five and twenty years of our age, is of a hot and moiſt temper. From thence Youth, proceeding to five and thirty or fourty years, of a hot and dry; Manhood, conſiſting in the ten or fifteen next years, is eſteemed cold and dry; and thence Old age, till our lifes end, is more or leſs ſaid to be cold and moiſt, or according to others, cold and dry; its moiſture being but accidental and excrementitious, though God can yet extend our life to a long durance, as the *German* Poet *Freinſhemius* elegantly expreſſeth.

Iſt ſchier nichts ubzig mehr, als ſeelen voller ſchmen,
Als lever voller Thod, als leiber voller plag,
Als zeiten voller qual, als zungen voller klag.

Als

Als hertzen voller angſt, als augen voller trahnen.

That is,

Though nothing but a ſoul full fraught with longing fears,
Be left, a deathful life, a body full of pain,
A time full of diſtreſs, a tongue but to complain,
A much oppreſſed heart, and an eye full of tears.

The Spring is temperate, Summer is hot and dry, Autumn cold and dry, and Winter cold and moiſt. The Spring begins when the Sun enters the Sign *Aries*, and continues as the other ſeaſons, with ſmall difference do, ſome three months, whilſt the Sun runs through as many Signs of the *Zodiack*, whoſe number and order *Virgil* thus deſcribes.

1 2
Primus adeſt Aries, Taurus inſignibus auro
3 4
Cornibus, & Fratres, & Cancer, aquatile ſignum,
5
Tum Leo terribilis Nemeus, atq; innuba Virgo. 6 *Libra*

7 8
Libra subit, caudaque animal quod dirigit
ictum. 9 10
Armatusq; arcu Chyron & Corniger Hircus,
11 12
Fusor aqua simul & fulgenti lumine Pisces.

The name of Humor is given to whatsoever is perceived flowing in the Body of a living Creature endued with blood. The same is, *first*, Natural; or, *secondly*, against Nature. The Natural is again divided into primary and secundary, alimentary and excrementitious.

The alimentary or nourishing humors were constituted by the Antients four in number; 1. *Blood.* 2. *Phlegm.* 3. *Choler.* 4. *Melancholly.* But the Modern esteem that *Blood* only is a fit nourishment of the Body, and that the other humors flowing with it, whereunto they have added the *Lymphatick* and *Pancreatical* Juice, do only contribute to its effervescency or temperature, as will be said hereafter, amongst which humours there is no melancholy, except the thickest and grossest part of the Blood as is found in the *Atrabiliary Capsules*, or is evacuated by the

Hem-

Hæmorroids, be taken for it. But before we expound how blood is produced, let us hear how the Ancients did conceive it; It is thus expressed by the *Danish* Poet, *Arocusis*.

Du Mauge, gode Kock, din mad saa vel for kryder,
At deraf, Kortar hid, en kraftig saft ud flyder,
Som Du til Leftueren, vid middel aaren, sender,
Inarings meening Shy, hun den til blod forvender,
Ors giffuer det igieu, naar saften ny yder,
At samme ferske blod til alle Lemmer flyder,
Ved aarr gangr krum, &c.

That is,

Thou Stomack, gallant Cook, thy meat so well dost dress,
That of it in a trice, thou canst a juice express
Full of craft, which is then sent, by the middle Vein,
To th' Liver, that it may the dye of blood obtain,

Whence

Whence it is given out, when th' other
sap is wanting
And is seen through our Limbs, a free
passage attempting
By crooked Channel-Veins, *&c.*

This was the Antients meaning, but the Moderns have found, that the aliments being well chewed in the Mouth, are by the *Oesophagus* transported into the stomack, where by the virtue of some acid liquors, proceeding from the reliques of the former Concoction, and the Vapours of the *Panxreatical* juice, together with the subtil descending from the *Maxillar Glandules*, they are fermented, agitated and calified, almost in the same manner, as mettals are dissolved by *Aqua fortis*. In the mean time the aliments, helped by the warmth of the neighbouring parts, do often contract a spontaneous heat, as we see sometimes hay, too freshly brought in, whereby they are digested, which being done, the stomack straightning it self, and opening its lower orifice, called the *Pilorus*, they are thrust down to the *Duodenum*, where by an effervescency arising from the mixture of *Choler*, de-

deſcending thither by the *biliary* conduit, together with the *pancreatical* juice, and *Phlegm* ſticking to the Bowels, they are ſegregated, and their groſſeſt parts precipitated down to be expelled at the ſeat; whilſt the ſubtileſt, called *Chylus*, are tranſported by the milky Veins, to the common receptacle, where being diluted by the *Lymphatick* humor, the *Chylus* is carried by the *Thoracick* conduits to the *ſubclavicular* branch of the *Vena cava*, where it is mixt with the Blood, deſcending from the Head and other ſuperiour parts; of whoſe Nature and Colour it begins then to partake, without coming to the Liver, which therefore can neither be the ſeat nor organ of *Sanguification*.

The *Chylus* thus mixt with the deſcending Blood, being come into the trunck of the *Vena cava*, is mingled with the Blood which aſcends by the ſame Vein, from the inferiour parts, and is tranſmitted into the right Ventricle of the Heart, where it ſuffers an effervеſcency ariſing from the mixture of the *Lymphatick* ſpirit, and the *lixivious* ſalt of Choler, communicated to the Blood,

out

out of the Gall by the *Hepatick* conduit, whereby the fiery parts of each being freed of their hindrance, do insinuate themselves in the oily parts of the blood, which they rarify, whereby the *Valvules* of the *Vena cava* are shut up, and the Blood thus rarified, craving a larger room than before, the Heart is compell'd to its expulsion, which it effects by the collected fibres, as another muscle, and the *Valvules* of the *Arterial Vein* being opened it is transported into the Lungs, cooled by *Respiration*, whereby the Heart and the said Vein is unswell'd, and the Blood is conveigh'd by the usual Artery, whose *Valvules* are then open, into the left Ventricle of the Heart, where it is again heated and rarified, and being carried by the *Aortal Artery*, whose *Valvules* then give passage, into the greatest Arteries, and from thence into the smaller, the Heart and the said Arteries leave swelling, and the Blood is thence received by the *Anastomoses* in the Veins, from whence it proceeds, through the *vena cava*, into the right *Ventricle* of the heart, repeating so a continual circulation, a *perpetuum mobile* during our Life.

Blood

Blood is temperate, of a mean thickneſs, *Red* in colour, and of a ſweet taſte, it ſerves inſtead of fuel to the vital heat, which it conveys to the ſeveral parts, to whoſe nutrition and increaſe it alone contributes.

The Antients did divide it into *Venal* and *Arterial*, though the place of their flowing be their chief difference.

Phlegm is of a watry nature, liquid, whitiſh and unſavoury, it ſerveth to the *Effervеſcency* in the *duodenum*, tempers the Blood, and renders the Joynts ſlippery.

Choler is of a fiery nature, a thin conſiſtence, a yellow colour, and a bitter taſte, it cauſeth an *Effervеſcency* in the *duodenum*, and another in the Heart, as aforeſaid; it provokes the expelling faculty, and thins all *Phlegm* ſticking to the inward parts.

The *Lymphatick* humour is of a pure watry ſubſtance, without any colour, and of a ſubacid taſte. Its uſes are manifold, but the chief are to promote an eaſier flowing of the *Chylus*, and to convey the blood through the *thoracick* conduit to the Heart, and there contribute thence

to its Effervescency, it tempers the Blood and perhaps, together with *phlegm*, moistens the articulations of the Joynts.

According to the *Antients*, *Phlegm* predominates from *Midnight* till *Sun-rising*; *Blood* from that time till *Noon*, thence *Choler* obtains the superiority till *Sun-setting*, and they gave the remaining time till *Midnight* to *Melancholy*, which we have said to be nothing but grosse *Blood*.

Phlegm is also more copious in *Autumn*, *Blood* in the *Spring*, *Choller* in *Summer*, and *Melancholy* or thick *blood* in *Winter*.

They esteemed also *Phlegm* to be moved every day, *Choler* every third day, and *Melancholy* every fourth; supposing the *Quotidian Ague* to be caused by *Phlegm*, the *Tertian* by *Choler*, and the *Quartan* by *Melancholy*, which *De Graff* attributes to the various Obstructions of the lateral branches of the *Pancreas*; In his Treatise *De succo pancreatico*.

The signs of a Bloody Complexion, are a red colour in the Face, a moist heat through the whole Body, fleshy Muscles, great Veins, and a chearful Heart.

Cholericks are of a yellowish colour, a light

a light diſpoſition, and a lean Body; they are witty and liberal, but wrathful and revengeful.

Phlegmaticks are pale, of a ſoft fleſh, ſometimes fat, lazy, ſleepy and dull.

Melancholick or thick blooded men have a blackiſh face, and a ſad look, they are ſorrowful, obſtinate, fearful and covetous, but withall very capable of doctrine.

The *Arabs* inſtituted four ſecundary *Humours*, whereof they called the firſt *Innominate* or *Implanted*, which they ſuppoſed to be conteined in the extremities of the little *Veins*, where it begun to take ſome alteration of the ſeveral parts. They called the ſame *Daw*, when (as it were) it bedewed them. *Gluten*, when it ſtuck faſt to them; and *Cambium*, when it was wholy converted into their ſubſtance, but the nutrition and increaſe of the ſeveral parts is better expreſſed by the *Moderns*, as will be ſaid, when we ſpeak of Functions.

When the *Primary humors* exceed the bounds of their due quantities, they are deemed againſt nature; and they may be corrupted in the Veins or out of them.

Phlegm, corrupted in the Veins, is of a *sower* or *salt* taste, and of no colour; but out of the Veins, it is distinguished in *muscous*, *watry*, *plastry* and *glazy*, whereunto the *Lymphatick* humour, the *salive*, and the *Pancreatical juice* may be conveniently referred when they are vitiated.

Choler, corrupted in the Veins, is called *vitellin*, or like the yolk of Eggs, which the Antients esteemed to be produced by an intense heat, but is more truly atributed to the mixture of some *acid humour*, as can be perceived when a little spirit of *Vitriol* is powred into some Gall; it often degenerates in *Poraceous*, *rusty*, and *glasteous*, according to its degrees of *acidity*.

The *Melancholy* humour or thickest Blood, is by some thought to turn by *adustion* into *black choler*, but according to *Regnerus de Graaf*, this last proceeds from the mixture of *Choler* with a too *acid pancreatical juice*, whereby it is turned into a *greenish black colour*, as the Antients describe the *atrabiliary* humour.

The *Excrementitious* humours are also 1. *Phlegm*. 2. *Choler*. 3. *Melancholly*. 4. And, *Serum*.

They

They are called *excrementitious*, because they can yield no nourishment to the Body, and therefore are expelled,

1. *Phlegm*, not to the Brains, as the Antients conceived, but to the *Maxillar Glandules*, and thence through the Mouth and Nostrils out of the Body.

2. *Choler*, by the *Cystick arteries* to the Gall, whence the superfluous part is expelled to the *Duodenum*, and thence evacuated at the Seat.

3. *Melancholly*, which is not attracted by the *Spleen*, as the *Antients* supposed, but is an Excrement of the grossest Blood, which is often evacuated by the *Hæmorrhoides*, and is also sent to the *Atrabiliary Capsuls*, to be, perhaps, voided with the *Urine*, which therefore appears sometimes of a black colour.

4. *Serum*, which is either evacuated,

First, In the form of *Vapours*, by *transpiration*, whereby, according to *Sanctorius*, more than the half part of our *Aliments* are dissipated.

Secondly, Or in the consistence of *Urine* which being separated from the bloud in the *Kidneys*, and filtred through the *Papillar Caruncles* into the *Pilorus*, is

powred through the *Uriters*, into the *Bladder*, and having received the thinneſt, and moſt ſerous part of the *Chylus* immediately from the Stomack, by the *Gaſtrick Vein*, is thence evacuated out of the Body.

To *Serum*, is alſo referred *Sweat* and the *Tears* we ſhed.

A *Part* or *Limb* is defined, *A Body adhering to the whole, and partaking of the ſame life with it, being created for the exerciſing of certain Functions.*

They are diſtinguiſhed in *Similaries* and *Diſſimilaries.*

A *Similary* part, is that, which *cannot be divided in other parts of a different ſpecies*; and it is twofold, *Spermatick* and *Carnal.*

1. The *Spermatick* are conſtructed in the firſt conformation of the body, out of the groſſeſt part of the Seed.

2. The *Carnal* out of the *Menſtrual-Blood.*

The *Similary* parts are Eleven in number.

1. *Bones.*
2. *Tendrels.*
3. *Ligaments.*

4. *Ten-*

4. *Tendons.*
5. *Membranes.*
6. *Fibres.*
7. *A threefold fleſh* (the *Muſculous*, the *Parenchyme*, and the *Glandules.*)
8. The *Skin.*
9. The *Veines.*
10. The *Arteries.*
11. And the *Nerves* or *Sinews.*

The *Bones* are joyned either by,

I. *Diarthroſis*, or Articulation with ſome motion, either by

1. *Enarthoſis*, when there is a conſiderable quantity of the Bone received in a large Cavity.

2. *Arthrodia*, when the receiving cavity is but Superficiary.

3. *Ginglime*, when a Bone receives and is received.

II. *Symphoſis*, or Coalition without Motion.

1. *Sutures*, as in the Bones of the Head.

2. *Harmony*, as in the Bones of the Noſe and upper Jaw.

3. *Gomphoſis*, as the Teeth.

And they are bound either by,

First, *Syncondrosis*, or with a Tendrel.

Secondly, *Syndeurosis*, or a Ligament.

Thirdly, *Syfarcosis*, or with some flesh or muscle.

Note that to the exercising of the *Similary* parts *Functions*, there needs only their due *temper* and *commoderation*.

A *Dissimilary part* is that, *which may be divided in parts of a different Species*, Many do confound them with the *Organical*. Nevertheless there is this difference, that all *Dissimilary* parts are *Organical*, but not all *Organical*, *Dissimilary*; for the Bones, Veins and Arteries are *Similary*, and yet produce *Organical* actions.

Four conditions are requisite to the perfect exercising of the *Dissimilaries* actions: namely,

1. A due *Conformation*.
2. *Magnitude*.
3. *Number*.
4. And *Conjunction*.

Whereof the last comprehends two others, to wit, *Seat* and *Connexion*.

These

Theſe parts are diſtinguiſhed in, *Firſt*, *Containing*; and *Secondly*, *Contained*.

And then again, in 1. *Common*; and 2. *Proper*. Diſtinguiſhed in 1. *Nobles*; 2. *Ignobles*.

Firſt, The *Noble* or principal parts, diſtributing the Spirits and Faculties to the whole Body, are abſolutely neceſſary to it. They are three; *Viz.*

1. The *Brains*.
2. *Heart*.
3. *Liver*.

Which being excepted, all the reſt are *Ignoble*, as being ſubſervient to them, and they are the other parts of 1. the *Head*. 2. *Trunk*. And 3. *Joints*.

1. The *Head*, is divided in the *Scul*, and *Face*; the common containing parts whereof are, the thin and the hairy *Skin*, the fat and the fleſhy *Membrane*; Its proper parts are the *Scalp*, or *Pericrane*, the *Perioſte*, the *Muſcles*, the *Bones*, and two *Meninges*. Common containing Parts of the

The contained parts of it are the *Brain*, the *After-brain*, and the *Marrow*.

The ſecond hath in its upper part the *fore-head*, in the lower, the *mouth*, and the inſtruments of the *Senſes*, as the *Eyes*,

the *Eares*, the *Noſe*, *&c.*

2. The *Trunk* is diſtinguiſhed in the *Breaſt* and lower *Belly*, the proper containing parts of the firſt, beſides, the *Muſcles*, *Bones*, &c. Being the *Pap*, the *Midriff*, the *Pleure*, and the *Mediaſtin*.

The contained are either *Bowels*, as the *Heart*, with its *purſe*, the *Lungs*, a part of the *Weazon* and of the *throat*; or *Veſſels*, as ſome branches of the *Vena Cava*, and great *Artery*; ſuſtained by the *thymus* in the *Throat* and ſeveral *Sinews*.

The *lower Bellies* proper containing parts, are the *Muſcles* of the *Panch*, and the *Belly-rim*.

The contained are either employed to *Nutrition*, namely to *Chylification*, as the *Stomack*, the *Kall*, the *Sweet-bread*, the *Guts*, and the *Meſentery*; or to *Sanguification*, as the *Meſaraick Veins*, the *poſt Vein*, and the *Cava*, the *Liver*, the *Gall*, the *Bladder*, and the *Milt*.

3. The *Joints* are divided in the *uppermoſt*, containing the great Hand, namely the *Arm*, that is, the Shoulder, from the upper ſhoulder to the Elbow; and the Cubit from the Elbow to the Wriſt. The leſſer Hand, divided in the

Wriſt

Wriſt between the Cubit and the Palm, and the fiſt between the Wriſt and the beginning of the Fingers, whoſe inward part is called the *Palm*, and the outward, the *Back* of the *Hand*.

The *undermoſt* contain the great Foot, comprehending the *Thigh*, from the *Britch* to the *Knee*, the *Leg* from the *Knee* to the leſſer foot, which is divided in the Foot, *Pedium*, *Metapedium*, and *Toes*.

Before we come to *Faculties* and *Functions*, it will not be amiſs to ſay what the *Soul* is.

They define it *The ſubſtantial Form of a living Body, and the inward principle of the actions thereof.* For,

The Soul *a Subſtance and a Spirit is,*
Which God *himſelf doth in the Body make*
Which makes the man, for every man from this
The Nature of a Man, and Name doth take.

Its connexion with the Body is called *Life*, and its ſeparation *Death*: Neither is this laſt greatly to be feared of a *Chriſtian*,

stian, since it is but a passage to a better Life, and that, as saith the *Italian* Poet.

Altro mal non ha morte chél pensar a morire,
E chi morir pur duee, quanto piu tosto more,
Tanto piu tosto al suo morir sinvola.

A *Faculty* is a certain disposition of the Body, whereby it can do something, though it may be, it doth it not, so that it is *only a power of acting*.

Its division is needless, since it is but one power, though it produceth several actions, according to the Vacuity of its Organs.

A *Function*, is described, the exercise of a *Faculty*, and is only distinguisted in *Natural* and *Animal*, *Pulse* being referred by the *Moderns* to sanguification, whereof we have spoken in the *Theorem* of *Blood*, and *Respiring* to motion, of which will be said hereafter.

The *Natural Function* is divided in,

1. *Nutrition.*
2. *Growth.*
3. *Generation.*

To the first whereof the *Antients* made four

four others to be ſubſervient; for as *Dykes* ſaith of the *Soul*,

Here ſhe attracts, and there ſhe doth retain,
Here ſhe decocts, and doth the food prepare,
There ſhe diſtributes it to every Veine:
And here expels what ſhe may fitly ſpare.

Yet the *Moderns* do exclude from thence all *ſimilary attraction* and *retention*, *Deglution* being performed by *Detruſion* only; the ſeveral parts of the *Mouth*, the *Tongue*, the *OEſophague*, &c. contributing thereunto; *Retention* being alſo effected by the Oblique Fibres of the Stomack; but *Hunger* is produced by the ſouriſh Vapors of the *acid* in the Stomack, which do gently *Vellicate* its upper Orifice, and the apparent cauſe of *Thirſt* is the want of moiſture.

To *Concoction* three others are ſubordinate.

1. *Chylification.*
2. *Sanguification.*
3. *Aſſimilation.*

The

The two first whereof, together with *Expulsion*, are explained in the describing of *Humours*, so that only Assimilation and Growth are here to be expounded, which take thus.

When the *Arteries* begin to swell, as aforesaid, the particles of the Blood, which in them are convey'd to the roots of certain *filaments*, issuing from the ends of the smallest *Arteries*, whereby they compose the *Bones*, *Flesh*, *Skin*, &c. according to the various manner of their application and contexture, or directed by the same *Plastick* virtue whereby the said parts were formed, which they nourish, something distending them, and intruding themselves in their vacancies; where they remain, when the *Arteries* return to their former state.

And *Growth* is likewise effected: The pores of the matter of Childrens Bodies being easily extended, whereby some particles of the Blood, a little greater than those whose places they fill, may enter and subsist therein, which cannot be longer done, when their Limbs are grown more solid.

Generation is a *Function*, *whereby a man*

man produceth another like to himself, whereunto the *Antients* did subordain two others,

1. *Alteration.*
2. *Conformation.*

Which the *Moderns* do rather attribute to the *Plastick* virtue of the *Seed*, though denyed by *Rhegius* and other *Cartesians*, who affirm, That the particles of the *Seed*, moved by its own heat, and that of the *Uterus*, because of their various figures, are necessarily turned into the Brood of an animal, whereunto they since attribute the whole formation of the *Fœtus*, without the Function of any intellectual faculty directing it.

The *Animal* function is divided in,

1. *Principal.*
2. *Moving.*
3. *Sensitive.*

Whereof the first comprehends these three, *viz.*

1. *Imagination*, whereby all Objects Species offered to the external senses are perceived and discerned.

2. *Reasoning*, whereby a man discourseth and understands.

3. *Memory*, whereby the Species of things

things perceived, conceived and understood are preserved, whereof will be further spoken in the period of *Sensation.*

Motion is thus performed, The most *vivid* and quickest particles of the *Blood*, such as we may conceive the *Vital spirits*, do ascend from the left *Ventricle* of the Heart, through the *Carotics* and *Cervical Arteries*, into the Cavities of the Brain; where they are turned into a subtile flame or wind, usually called the *Animal Spirits*, which being driven by grosser particles, do not enter in the *Pineal Glandule* (*Steno* having shewed us how unapt it is thereunto) but in some (yet unknown) more convenient place of the Head, whence they sally out into the Cavities of the Brain and the pores of its substance, to be thence conveyed into the Nerves, where they have a power (which the learned *Willis* calleth *Elastick*) to change the figure of the Muscles, and so move the whole Body.

To this manner of moving *Respiration* is also to be referred, for the *Muscles* of the *Thorax* drawing it up, the *Lungs*,

to

to avoid vacuity, are extended, whereby their ſmall cavities are opened, and receive the inſpired Air, which is again excluded in expiration, when the Lungs following the reſtriction of the *Abdomen*, their ſaid *Cavities* are again ſtraightned.

The *Senſitive Function*, is the exerciſe of the five external *Senſes*, which comparatively to certain Beaſts, are compriſed in theſe two Verſes.

Nos Aper Auditu præcellit, Aranea Tactu,
Vultur Odoratu, Lynx Viſu, Simia Guſtu.

That is,

The Bore excels in Hearing, and the Spider
By ſence of Touch, is a ſubtil divider.
The Vulters Smell, th' Apes Taſte, and Lynxes Sight,
Exeells the Man by far, that ſolid Wight.

Their reſpective Inſtruments are,

1. The *Eyes* of *Seeing* in the *Retina*.
2. The *Ears* of *Hearing* in the *Auditory Nerve*.
3. The

3. The *Nose* of *Smelling*, not through the *Os Cribriforme*, which is not pierced as the *Antients* conceived, but by the *Apophyses Mammillares*, or the extremities of the *Nerves*.

4. The *Tongue* of *Tasting*, by the *Papillary eminencies*, noted by *Bellinus*, whence Savours are conducted to the *Filaments* of the 4 and 7 *pair* of the *Nerves* that end there.

5. The *Skin* of *Touching*, by the *Pyramidal papils*, observed by *Malpigius*, and esteemed the extremities of the *Nerves* of the *sixth pair* ending in it.

Sensation, is performed as followeth, When the small *Filaments* of the *Sinews* are in the least moved by the Objects of the senses, they draw to them the parts of the *Brain* from whence they take *Origin*, whereby they open some pores of the inward *superficy* of it, through which the *animal Spirits*, being derived into the *Nerves* and *Muscles*, do excite those motions, which we perceive our senses, being thus or so affected, which is to be understood of all *Sensation*; and if the said spirits, having the Impression of some *Idea* conceived or also discerned

in

in ſome fit place of the Brain (as *Carteſius* eſteemed the *Pineal Glandule*) do often paſs through the ſame pores of the Brains texture, they do dilate them ſo, that the Objects being abſent, they may be repreſented to the Soul, whence *Memory* doth depend. But if opening one or more of them, ſome others are dilated, *Reminiſcency* is effected; and if the traces of the *Ideas* are conveyed by the ſmal Arteries to the heart, and diffuſe their beams throughout the maſs of Blood, it may thence proceed, that the *Foſter* is ſometimes noted with certain markes.

Sleep is a *Ceſſation* of *Motion* and of the *External Senſes*, and is produced, when the Braines ſubſtance is not ſufficiently diſtended by the Spirits aforeſaid, or when it is overwhelmed with Vapours; for in theſe caſes it falls together, and oppreſſeth the Nerves of the ſeveral Senſes, that their Objects cannot be transmitted. And *Dreams*, which happen during Sleep have their origin, partly from the inequality of the Spirits iſſuing from the Souls *Domicil*, and partly from the occurring impreſſions of *Memory*.

Spirits are defined, *A thin, invisible, æthereall and most quick substance, arising from the subtilest parts of the Blood, to be the Vehicle of all necessary actions.*

The *Antients* did divide it, in

1. *Implanted.*
2. *Adventitious.*

Whereof the first is denyed by some, who conceive it impossible, that the same cause acting in the same manner, should last so long, and produce so many and often contrary *Functions.*

They were formerly divided as the *Faculties* were, in

1. *Natural.*
2. *Vital.*
3. *Animal.*

But *Sylvius de le Boe*, admits none but the *Animal*, and other *Moderns* the *Vital*, under which they comprehend the *Natural* and the *Animal*; taking the subtilest parts of the Blood, arising from the left *Ventricle* of the Heart, for the first, which are turned in the Brains into the *Animal*, serving,

First, To sundry motions of the Soul and Body.

Secondly, To the exercising of the internal

ternal and external *Senſes.*

3. To the alteration of *Humours.*

Native Heat is a proper and ſpecial quality to all animated creatures, whereby they live and exerciſe their functions, uſes, and neceſſary operations.

Thus I think to have briefly explained, not only the Natural things, but alſo their Annexes, except the manner of living, which if it be watry and moiſt, is obnoxious to diſeaſes of that temper; but if it be hot and dry, the contrary muſt be expected.

In ſum, it appears by the Premiſes, that the Body of Man is a *Microcoſme*, compoſed of ſeveral parts, wonderfully effigurated, and adorned with ſundry Functions, created to be for a certain time, the *Domicil* or dwelling place of the *Rational Soul*, ſo that not without cauſe, the *German* Poet exclaimes,

O Edles wunderthеir, zur weiſheit auſerkohren,
Voll geiſt, voll luſt, voll got, vom himmel ſelbſt gebohren,
Du Herr, du Eben bild, und auſzug allerwelt,

Der unter ics den lauff der hohen ſterner ſtelt,
Du weiſe Creatuur, &c.

O thou noble Animal, wonder to wiſdom choſen,
Full of Spirit and God, from Heaven it ſelf roſen.
Thou Lord, Type, and extract of the whole Univers,
Diſpoſing under thee the courſe of the high ſtars,
Thou creature full of Wit &c.

Thoſe things are called *not natural*, which do not enter in the Bodies compoſition, but by a right uſe whereof it may long be maintained healthful and ſound.

They are,

1. *Air.*
2. *Eating* and *Drinking.*
3. *Motion* and *Quiet.*
4. *Sleeping* and *Watching.*
5. *Repletion* and *Evacuation.*
6. The *Paſſions* of the mind.

In the adminiſtration of all which we ought to conſider,

1. The

1. The *Quality.*
2. *Quantity.*
3. *Manner* of *Using.*

A *free*, *open*, *ſerene*, and *thin Air* is to be eſteemed the beſt; as alſo the *Eaſt* and *North* Winds; but the *South* and *Weſtern* are held unwholſom.

The ſimpler our *diet* is, the healthfuller it is to be eſteemed; for as *Horace* ſaith, the variety of meat is very noxious, *viz.*

——— *nam variæ res*
Ut noceant homini credas, memor illius eſcæ,
Quæ ſimplex olim tibi ſederit, at ſimul aſſis
Miſcueris elixa, ſimul conchilia turdis,
Dulcia ſe in bilem vertent ſtomachoq; tumultum
Lenta feret pituita; vides ut pallidus omnis
Cœnâ deſurgit dubiâ.———

That thou mayſt know how various things offend,
Think but what ſingle meat did once defend

Thee from approaching hunger, but
at last,
Roasted with boyld, and Birds with
Shels thou hast
Together mixt; In *Choler* what is sweet
Will turn it self, and thy *Stomack* surfeit
With slimy *Phlegm:* Consider then how
pale
Each riseth from his Seat, and doubtful
Meal.

Meats, affording a good juice, and substance, are doubtless the wholsomest, and nevertheless, in expending them, the sicknesses nature, the strength, age, and labour of the Patient are to be perspicuously considered, whereunto an inveterate custom is to be added: for Country Men and Labourers convert meats of an easy digestion into *Choler*, but extract a laudable substance of a courser diet, and thus,

Consuetudo valet, longos mansura per annos,
Illaque Naturam, vires si sumpserit, æquat.

A constant use a second nature proves,
And if increast, with equal force it
moves. Neither

Neither did the *Antients* neglect Order in Eating, for they esteemed that what was easily decocted, should enter first into the *Stomach*, and that *Lubrick* meat ought to precede those that are *Astringent* : But it is now believed that those niceties may be omitted, since the *Aliments* are all converted in one mass, whence the *Chylus* is afterward separated. Whereunto I shall only add these two Verses of *Drinking*.

Aut nulla ebrietas, aut tanta sit, ut tibi curas
Eripiat, si quæ est inter utrumque nocet.

Be never Drunk, or so much let it be
As to asswage thy Cares; else 'twill hurt thee.

Motion comprehends all kind of exercises; the same ought to be moderate, and we ought to leave it when *Sweat* begins to break out through the *Pores*: for immoderate Labour weakens the Body, and is very pernicious, as *Ovid* saith of himself.

Me quoque debilitat semis immensa Laborum,
Ante meum tempus cogit & esse senem.
Otia corpus alunt, animus quoque pascitur illis,
Immodicus contra, carpit utrumque labor.

Continual Toyl weakens my weary Limbs,
And makes me Old before my time be come:
Body and Mind, by Rest are fed, it seems,
But too much Work precipitates their doom.

Sleep, as we said before, *Is a cessation from motion and sence*, whose *Office* is the restoring of the Bodies former strength. Its proper time is Night; an hour or two after Supper.

The first lying not being first on the Right Side, as many believe, but on the Left, where the bottom of the Stomach is and the meat ought to lye, and about morning, when concoction is ended on the Right; neither should it exceed the space of *Eight hours*; wherewith, if some are not satisfied, certainly the sooner,

Longa

Longa quieſcendi tempora fata dabunt.

The Fates will give ſufficient time to ſleep.

Dreams do in ſome manner indicate what excretion will be in the *Criſis*, for if red and fiery, they preſage a Cholerick one; if moiſt and watry, a Phlegmatick.

Moderate watching quickens the ſenſes, and diffuſeth heat and blood through the whole Body. But if it be immoderate, it weakens the ſame, dries up the Spirits, and ſpoiles the brains Temperature.

Repletion is either of *quality* or of *quantity*.

The firſt is ſeen in the *Hectick Feaver*, or *Maraſmus*.

The ſecond hath a relation to the containing parts, and is meaſured by their diſtention; or to the Bodies ſtrength, when the ſame is fuller of humours than it can well bear.

The repletion of a ſingle humour is called *Cacochimy*; that of more *Pletora*.

Evacuation, in the ſtricteſt ſence, *Is an effu-*

effusion of such humours as are superfluous and hurtful, and is either of the whole body, chiefly performed by *Phlebotomy*, *Sweat* and *Purgation*, or of the several parts, by their respective Conduits, as the *Brains*, by the *Eyes*, *Nose* and *Eares*, the *Lungs* by the *Wind-pipe*, &c. In all *Evacuation*, three things are to be observ'd and considered, The *Quantity*, *Quality*, and manner of *Excretion*, *V. g.* The *Empieme* being opened, the excluded matter ought to be answerable in quantity to that which is included. The most laudable is *white*, *even*, and as little *stinking* as may be. And lastly, all must be purged out at one time, least the Patient suffer too great an Effusion of Spirits.

The Passions of the Soul, or Perturbations of the Mind, are very prevalent to alter the Bodies Constitution; for as the Banished Poet saith,

Unda locusque nocent, & causa valentior istis,
Anxietas animi; quæ mihi semper adest.

The

The Sea and place do hurt, but yet I find
A greater Cauſe, the torment of my mind.

We wil therefore briefly expound their Effects.

A moderate *Joy*, dilates the heart, and diſtributes abundance of Spirits to the Face, and other parts; it helps Concoction, and renders our habitude more chearful, and pleaſant.

Anger or *Wrath* performs the like effuſion, but much more rapid and ſwift. It kindleth ſometimes the Humours ſo much, that it makes them apt to receive a ſharp volatile Salt, which is thought the cauſe of *putrid Feavers*, and produceth alſo other Symptoms; yet it may be profitably uſed, to quicken the natural heat, and render it more active, when it is almoſt proſtrated.

Sorrow and *Fear*, draw heat and blood ſuddenly to the Heart, whence the forces do preſently fall, and ſometimes death immediately follows, the Vital Faculty being overwhelmed with Blood and Spirits.

This I conceive ſufficient, ſince all other

other Passions of the mind may be referred to these three or four.

Those things are termed against nature, which may procure the destroying and ruine of the Body.

They are the cause of Diseases, Disease it self, and its Accidents, or Symptoms.

The *Cause* of a *Disease*, is, *whatsoever doth any way contribute to the being, or increase of it.* Which, though Physitians give them many distinctions, may nevertheless all be referred to the *efficient*, especially divided in 1. *External*, 2. *Internal*; For, Alas! How many things may extinguish our light.

The humours within us maintain an equal fight; and least it be too long, Death hath a Pike, a Ball, a Sword, a Knife, a Stone and an Arrow, to cut our feeble thred, *&c.*

The *External* Cause cometh from without; the *Internal* hath its seat in the Body, and is either,

1. *Antecedent*, that yeilds aptitude to a sickness.

Or, 2. *Conjoyn'd*, which immediately, and of it self perfects it.

They are also co-ingendred with the Patient,

Patient, or have acceſſe to him after his Birth.

A *Diſeaſe* is, *A diſpoſition againſt Nature immediately, and of it ſelf, hurting the actions.*

The ſame is *Simple* or *Complicated*.

The *firſt* is, when there is no plurality, or compoſition of Diſeaſes.

The *ſecond*, When it is followed of many ſymptoms, or when the Cauſe is ſo connexed with it, that it may be lookt upon as a particular Sickneſs.

Diſeaſes are of a threefold ſpecies.

1. *Intempery.*
2. *Evil Conformation.*
3. *Solution of Continuity.*

The *firſt* is, an Indiſpoſition of the Similary parts, cauſed by the exceſs of a ſingle Humour or the Exuberance of more; The laſt whereof is called *naked*, or *conjoyned* with a Vice of the ſame *Humours*, and is termed *equal*, as being equally ſpread throughout the whole Body, or *inequal*, as affecting only ſome particular part of it.

There are four ſorts of evil Conformation. Namely in,

1. Fi-

1. *Figure.*
2. *Magnitude.*
3. *Number.*
4. *Scituation.*

Solution of *Continuity* is a common Disease, of the *Similary* and *Organical* parts, which hath several Names, according to the places where it is incident; For in the Flesh it is called *Helcos*, in the Bones, *Cathagma*; in the Nerves, *Spasma.*

The *Symptoms* of a Disease are the *Effects* and *Productions* of it; *To wit,*

1. *A hurt action,* (that is 1. *Abolished.* 2. *Diminished.* Or, 3. *Depraved.*)

2. A *Vice* in the Bodyes Habitude.

3. *Vitiated Excretions.*

Of the aforesaid *Precepts* are collected two Intentions.

1. What is to be done.

2. And if it may be done.

But the *third* belongs to Art, *viz.* How it must be done.

The *Practice* whereof is better declared in the Words annexed, and the follow-

following Chapters, that do briefly comprehend what doth belong to a Chirurgeon.

The *Indications* are of three first and principal *Species*, *viz.*

I. The first is drawn from the natural things which do Indicate their conservation, by the use of things like to themselves, and of this kind are the Indications drawn from,

1. The strength and forces of the *Patient*, which to preserve, the proper Cure is often to be delayed, for without them, the Chirurgeon can effect but little.

2. His *Temper*, *viz.*
   1. *Sanguine.*
   2. *Cholerick.*
   3. *Phlegmatick.*
   4. *Melancholy.*

3. The *Habitude* of his *Body.*
   1. Soft and delicate.
   2. Lean or Fat.
   3. Tall or Short.

Least he lose that *Symetry* which Nahath allotted him.

4. The Condition and Nature of the part

part affected. Wherein we consider,

1. Its *Substance*, whether if *Similary*, it be,
   1. *Hot.*
   2. *Cold.*
   3. *Moist.*
   4. *Dry.*

   If *Organical*,
   1. *Principal*,
   2. Or *Ignoble.*

   If it be,
   1. Of a *quick Sense.*
   2. Or *Stupid* and *Dull.*

   And lastly, its
   1. *Form.*
   2. *Figure.*
   3. *Magnitude.*
   4. *Number.*
   5. *Connexion.*
   6. *Action* or *Use.*

5. The *Age*; for many Diseases cannot be Cured in Old Age.

6. The *Sex*, for Women are easier purged than Men.

7. The *Season* of the *Year*, for Hot meat is convenient in Winter, Cold in Summer, Moist in Autumn, and Dry in the Spring.

8. The

8. The time of the Diſeaſe, for what is convenient in the beginning, is not ſo in the progreſs, ſtate or end.

II. The ſecond is drawn from the things not *Natural*; Which do *indicate* their Alteration; as if *Air* does conſpire with *Nature* againſt the *Diſeaſe*, it ought to be kept; otherwiſe, it muſt be altered.

III. The third is taken from the things againſt *Nature*, which *indicate* their *Ablation*, and are,

1. The *Cauſe* of a Diſeaſe.
2. The *Diſeaſe* it ſelf.
3. The *Symptoms*.

Which do often *indicate* contrary things; but then this is the Rule.

When there is *Complication*, the firſt *Remedies* ought to take away,

1. The moſt *Dangerous*.
2. The *Cauſe*.
3. That without which nothing can be done. As,

1. *Loſs of Blood*.
2. *Fluxion*.
3. *Intempery*.

8. The time of the Disease, for what is convenient in the beginning, is not so in the progress, state or end.

II. The second is drawn from the things not *Natural*, Which do *indicate* their Alteration; as if *Air* does conspire with *Nature* against the *Disease*, it ought to be kept; otherwise it must be altered.

III. The third is taken from the things against *Nature*, which *indicate* their *Ablation*, and are,

1. The *Cause* of a Disease.
2. The *Disease* it self.
3. The *Symptoms*.

Which do often *indicate* contrary things; but then this is the Rule.

When there is *Complication*, the first *Remedies* ought to take away,

1. The most *Dangerous*.
2. The *Cause*.
3. That without which nothing can be done. As,

1. *Loss of Blood*.
2. *Fluxion*.
3. *Intemperie*.

A SHORT Compendium OF The PRACTICAL Part OF CHIRURGERY.

CHAP. II.

Of Impostumes.

HAving thus far treated of such *Theorems* and *Institutions*, as are wholly necessary to be known of all Wellwishers to *Chirurgery*, let us now

ſay ſomething of the Practical part thereof, ſince it is almoſt impoſſible to treat perfectly of the *Theorical*, unleſs the ſame do give ſome urgent occaſion of it, and in this it reſembles the three Parts of *Curative Phyſick*, that can hardly be ſeparated from one another, for as a *French* Poet doth intricately ſay;

Quand un Cordier cordant veut accorder ſa Corde,
Pour ſa corde accorder, trois cordens il accorde,
Mais ſi un des cordons de la Corde diſcorde,
Le Cordon diſcordant fait diſcorder la Corde.

When a *Ropemaker* makes a *Rope*,
Of ſmaller *Ropes* he twiſteth three,
But he cannot attain his *Hope*
If *One* of them do *diſagree*.

We ſhall then divide this ſmall Treatiſe into ſix other Chapters.

The *Firſt* whereof ſhall give the general Documents of *Impoſtumes*.

The *Second* of *Wounds*.

The

The *Third* of *Ulcers.*
The *Fourth* of *Fractures* and *Diſlocations.*
The *Fifth* of the *Generation* and *Production* of *Man.*
The *Sixth* of the *Venereal* Diſeaſe.
The *Seventh* of ſome other *Indiſpoſitions* that are Cured by *Chirurgery.*

An *Impoſtume* then is defined, *A Diſeaſe*, compoſed of three others.

1. *Intempery.*
2. *Evil Conformation.*
3. *Solution* of *Continuity.*

The general Cauſes of it are,

1. *Fluxion.*
2. *Congeſtion.*

The ſubordinate ones of the firſt whereof are commonly,

1. A lower ſcituation of the part affected.
2. The Soreneſs of it.
3. Its Heat, cauſed by a two violent motion.
4. The outward *Proximity* of ſome hot Body.
5. Or the application of ſharp medicaments.

The Causes of *Congestion* are two, namely a defect of Assimulation in the Diseased part.

2. The infirmity of the *Expulsive Function.*

The difference of *Impostumes* are manifold, but they are chiefly taken of their quality, whereby they are termed great, of a mean greatness, or little.

Or of the part affected, as *Opthalmys* in the *Eye*, *Varices* in the *Legs*.

Or of their Accidents, as their *Soreness*, whence they are called *painful*, *smarting*, *insensible*, &c.

Or of their Colour, by reason of which some are called *red*, *white*, *livid*, *yellow*, &c.

But the chiefest and most necessary difference is that which is taken from the matter whereof they are composed, which the following Discourse will more clearly manifest.

The Matter of *Impostumes* is either,

1. *Natural*, Which is,

1. *Hot*, as *Blood*, whence is made a true *Phlegm*; Or,

Choler, whence a true *Erisipelas* is produced.

2. *Cold*,

2. *Cold*, as *first Phlegm*, whence riseth a true *OEdema*.

Secondly, *Melancholy*, whence is made a *Schirrus*.

II. Or *Against Nature*, which is either *First*, *Blood*, whence are made,

1. *Carbuncles.*
2. *Antraces.*
3. *Gangrene.*
4. *Ifiomene.*
5. *Sphacelus.*

Secondly, *Choler*, whence are produced,

1. *Herpes*, of the thickest.
2. *Herpes miliares*, of the thinnest.

Thirdly, *Phlegm*, whence arise,

1. *Watrish*,
2. *Windy Impostumes.*
3. *Strophulæ.*
4. *Knobs*, &c.

Fourthly, *Melancholy*, whence are engendred,

1. A spurious *Schirrus*,
2. All kinds of *Cankers.*

The signs of a *Sanguine Impostume* are pain in the diseased part, the heat of it, its redness, and tention.

Coldneſs, *ſoftneſs* and a leſſer pain indicates a *Phlegmatick* one.

A *yellowiſh* and *pale Colour*, and a ſmarting pain, ſheweth it to be *Cholerick*.

And *Tenſion*, *Hardneſs* and *Lividity*, with ſome pain by fits, do manifeſt that it is cauſed of *Melancholly*, or thick Blood. The Antients believed alſo that they had the *Paroxiſms*, and moving time of ſuch Humours as they are made of.

Thus the indiſpoſition of an *OEdema* was more intenſe from midnight till Sun-riſing, a *Phlegmon* more painful from Sun-riſing till Noon; thence to Sun-ſetting, an *Eriſipelas*; and a *Scirrhus* or *Canker*, from that time till Midnight.

Concerning the *Prognoſticks* of *Impoſtumes*, thoſe that are cauſed of cold humours or thick Blood, are of a longer Curation, and ſuch whoſe matter is againſt nature, are healed with greater difficulty, than thoſe cauſed of a natural one; whereunto you may add ſuch as turn themſelves in *Schirres* and *Knobs*.

There is to be conſidered in all *Impoſtumes* four times, *viz.*

1. Their *Beginning.*
2. *Augmentation.*
3. *State.*
4. *Decrease.*

The *first* whereof is, when the part beginneth to swell and pain.

The *second* when the swelling pain, and other accidents do increase.

The *third*, when they receive no augmentation.

The *fourth*, when they do decrease.

They are commonly termined in four manners, namely,

1. By *Resolution.*
2. *Suppuration.*
3. *Induration* of the part,
4. Or by its *Corruption* and *Gangrene*; which is worst of all.

The Signs of resolution are an itching of the diseased part, with the slacking of *Pulsation*, *Tension*, *Heat*, and other accidents.

Those of *Suppuration* are the greatness and vehemency of the Feavour, *pain*, *pulsation* and *heat.*

A *diminution* of swelling and pain, and a hardness left in the affected part do *indicate* its *Induration.*

And

And when the accidents of *heat*, *pain*, *pulsation* and *tension* are greater, than they use to be in *Suppuration*; when the pain ceaseth suddenly, without any manifest cause, if the part grows *livid* and *blackish*, and lastly if it *stinkes*, *Gangreen* is more than fully signified.

The first *Indication* in the Cure of all *Impostumes*, is the prohibiting of *Fluxion* by *repelling* and *intercepting* Remedies.

The *second* is an *evacuation* of the matter causing it, whether it be by *resolution*, *repulsion* or *suppuration*.

If it be caused by *Congestion*, then the part is to be *corroborated*, and the accidents *corrected*; taking alwayes the *Indication* from the most urgent.

We ought in this *Cure* to observe three things, namely,

Whether the matter causing the *Impostume* be ready to *Flow*, *Floweth*, or is yet *Impacted* in the diseased part.

In the beginning of all *Impostumes*, we ought alwayes to use *repelling* Remedies, unless it be,

1. When the matter is *venenous*, *thick*, *slow*, *viscous* or *deep hidden*

2. When

2. When the *Abcess* is *Critical*,
3. The *fluxion* near the Noble parts.
4. And falleth on too weak a Member.
5. And lastly, when the Body it self is wholly *Plethorical*.

A *Chirurgeon*, being but the *Helper* of *Nature*, ought chiefly in the *increase*, *state*, and *declination* of *Impostumes*, to attend what she aimeth at, whether it be to *resolution* or *suppuration*, without forceing her to a contrary motion, when that which she intends is not wholly *pernitious*: Whereunto to attain I have here added the Description of some *Cataplasms*, wherewith one may perform all necessary *Intention* in the general *Cure* of *Impostumes*.

The matter causing them is *discussed* and *repelled* by the following *Cataplasm*.

Recipe, *Barley meal, the Juice of House Leek, and Plantain, of each, two Ounces, powder made of Pomegranate rind, and of wild Granate Flowers, with a like quantity of Roses, two Drachms, Oyl of Mirtle, and Roses, of each an Ounce; make a Cataplasme.*

They

They are *Resolved* by this.

Recipe, *Mallows, Marshmallows, of each three handfulls; let them boyl, adding thereunto Barley meal two Ounces, ordinary Honey one Ounce, Oyl of Camomile and Melilot, of each an Ounce and half; make a Cataplasme.*

The following brings them to *Suppuration.*

Recipe, *The Roots of White Lillies, and Marshmallows, the Leaves of Mallows, Pellitory and Grounsel, of each one handful, let them be boyled in Metheglin, stamped and sifted, add to them Powder of Linseed two ounces, Swines fat, and Oyl of Lilies, of each an Ounce and a half; Make a Cataplasme.*

And this last mittigates the pain of them when it is too intense.

Recipe, *Crums of White bread dipped in luke-warm Milk a pound and half, Yolkes of Eggs three, Oyl of Roses two Ounces, and one Scruple of Saffron, make a Cataplasme.*

Note,

Note, that though this be the general Cure of *Impostumes*, they have nevertheless a more proper and particular one according to their several differences, but this is as 'twere a Rule whereby to proceed in it.

CHAP.

CHAP. III.

Of Wounds.

THE General Practice of *Impoſtumes*, being ſufficiently treated of in the former *Chapter*, this ſhall be adapted to expound ſuch Notions, as belong to the Cure of *Wounds*, whereof this is the Definition.

A Wound is a Solution of Continuity cauſed by an external Inſtrument, in any part of the Body, but the Bones.

Their *Cauſes* are all ſuch things as may violate the outward circumference of the Body, and unnaturally enter in it; and they are either animated, as the biting, and ſtinging of Beaſts, or inanimated, as Swords, Darts, Bullets, *&c.*

The difference of *Wounds* is manifold, and as *Samoicus* ſaith,

Tam

Tam varia humana ſunt vulnera conditionis,
Ut nequeant proprias cunctis adſcribere curas.

The *Wounds* of *Men* are ſeen ſo manifold
The proper *Cure* of each, cannot be told.

Nevertheleſs I have endeavoured to include the moſt General in the following *Paragraphs.*

The *Differences* of *Wounds* are drawn either,

I. From the nature of the *wounded* part, which is,

Firſt, Similary, and that

1. *Soft,* as the *Glandules* and *Fleſh.*
2. *Hard,* as the *Griſtles.*
3. *Mean,* as the *Membranes* and *Ligaments.*

Secondly, Diſſimilary, which is either,

1. *Principal,* as
   1. The *Brains,*
   2. The *Heart,*
   3. The *Liver.*

2. *Mi-*

2. Miniſtring to the principal, as
   1. *Aſpera Arteria*,
   2. The *Lungs*.
3. Neither of the foreſaid, as
   1. The *Eyes*,
   2. The *Hands*.
   3. The *Feet*.

II. From their own *Eſſence*, whereby they are termed,

Firſt Simple, when there is no Complication of other *Diſeaſes* or *Accidents*.

Secondly Compoſed, when there is ſome other *Diſeaſe* or *Accident indicating* a peculiar Curation.

III. From their *Quantity*, by which they are termed,

Firſt, Great, that is,
   1. *Long*,
   2. *Broad*,
   3. *Deep*.

Secondly Mean in all *Dimenſions*.

Thirdly, Little, that is,
   1. *Short*,
   2. *Narrow*,
   3. *Superficious*.

IV. From their *Figure*, whence we call them,

1. *Straight*,

1. *Strait*,
2. *Round*,
3. *Crooked*, &c.

When a *Wound* doth pierce the Skul, is known by theſe following Signs.

The wounded party doth preſently fall, lying without ſenſe, as if he were a ſleep; the Excrements are not retained, and ſurely, if the blood floweth by the Ears, Noſtrils, or the Mouth, and if he Vomits *Choler*, &c.

Whether the *Wound* penetrates into the *Thorax*, is known, if the *Air* cometh forth at the *Wound*, with a difficulty of *Reſpiration*, if there be a *gravative* pain on the *Diaphragme*, which is cauſed by much *Blood* lying on that part, that muſt afterward be rejected by coughing. A little after cometh a *Feaver*, and ſtinking breath, the Patient can lye but on the Back, and hath a perpetual deſire of *Vomiting*; it often degenerates in a *Fiſtula*.

When the *Lungs* are hurt, there iſſueth a *Spumous Blood* at the *Wound* with *Coughing*; there is a great difficulty of *Reſpiration*, and pain of the *Sides*.

We know the *Heart* to be *Wounded*, by the great quantity of *Blood* that cometh out at the *Wound*; by a trembling of the whole *Body*, a little *Pulſe*, a *Paleneſs* of the *Face*, and a cold *Sweat*, and frequent *Swounings*, a coldneſs of the *Extremities*, and a haſty *Death*.

When the *Diaphragme* is hurt, there is a *gravative* pain in that part, with *Phrenſie*, difficulty of *Breath*, *Cough* with a ſharp pain, and a contraction of the flanks upwards. Theſe ſigns appearing, one may pronounce Death to be near.

The *Vena Cava* or great *Artery* being hurt, Death ſpeedily followeth, becauſe of the great loſs of *Blood* and *Spirits*, whence the *Function* of the *Heart* and *Lungs* do ceaſe.

When the *Medulla Spinalis* is wounded, a *Paralyſis* or *Convulſion*, preſently hapneth, the motion of the lower part is aboliſhed, the Excrements of the *Belly* and *Bladder* either flow unwittingly, or are wholly ſuppreſſed.

The *Liver* being wounded, there cometh a great deal of *Blood* out at the *Wound*, and a *Pungitive* pain is felt as far as

as the *Cartilage Xiphoides*, which Death often followeth.

When the *Stomach* is wounded, the meat and drink cometh out at the *Wound*, then come Sweats and Cold of the extremities, fore-runners of Death.

If the *Spleen* be wounded, there floweth a blackish blood at the Wound, *Thirst* troubleth the Patient, with a pain of the left side, and the blood flowing into the *Belly*, causeth many accidents, and often Death.

The *Gutts* being wounded, a great pain torments the *Bowels*, the Excrements issue out at the Wound, and sometimes the *Gutts* out of the *Abdomen*, which afterwards pain and swell.

When the *Kidneys* are hurt, there is a great pain in making *Water*, the *Blood* coming out therewith, and the pain stretching it self to the *Yard* and *Testicles*.

The *Bladder* and *Ureters* being wounded, the pain reacheth to the *Flanks*, the parts of the *Nombril* are extended, the *Urine* cometh out bloody, and sometimes out at the wound.

When the *Womb* is hurt, the *Blood* com-

eth out at the *Privities*, the ſame accidents appearing as when the *Bladder* is wounded.

The *Nerves* being prickt or half cut, a ſharp pain is felt in the wounded part, with a ſudden inflammation, fluxion, tumor, feaver and convulſion, often with gangrene and death; unleſs it be remedied in time.

Thoſe *Wounds* are eſteemed dangerous, which do affect ſome principal Sinew, Vein, or Artery; Whereunto are added thoſe that are inflicted in the Privities of Man or Woman, or in their parts dedicated to natural excretion; as alſo thoſe that hurt either end of any muſcle; but ſuch as are in the fleſhy parts, according to the length of the fibres are eſteemed the leaſt conſiderable.

If a Bone, Sinew, Tendrel, or a portion of the Face, or Prepuce be cut off, it cannot be repaired.

All Wounds in the Bladder, Brain, Heart, Liver, Lungs Stomach, and ſmal Guts are deemed mortal.

The general *indication* in the Cure of Wounds is the *adjunction* of what is ſeparated, wherein the *Chirurgeon* ought

to

to be furniſhed with five Intentions.

The firſt whereof is to extract all ſtrange Bodies, as *Bullets*, *Darts*, *Arrows*, *Splinters*, &c. if any do hinder the Wounds agglutination.

The ſecond, to bring the divided extremities together.

The third, to keep them ſo.

The fourth, to preſerve the wounded parts temperature.

The fifth to correct ſuch accidents as may fall out.

The firſt of theſe *intentions* is performed, either with the Fingers, or ſome material Inſtrument, at the firſt dreſſing, unleſs the extraction of the foreſaid things might occaſion an *Hemoragy*, or ſome other dreadful accident; for then the ſafeſt is to leave their expulſion to Nature: but ſince it may ſometimes not little be advanced by Medicaments, take this following deſcription.

Recipe, *The Root of Iris of Florence, of Panacis and Capers, of each three Drachms, round Ariſtaloch, Manna and Frankincenſe, of each one Drachm, beat them to a powder, and incorporate them with Honey of Roſes,*

and Turpentine of Venice, of each two Ounces. Make a Salve thereof.

The ſecond and third *intention* in the Cure of wounds are performed in bringing and maintaining together their Extremities, by Bandages and Sutures; of the firſt whereof there is three ſorts, namely,

1. The *Incarnative*, which is adapted to ſimple Wounds, and is compoſed of two heads, beginning from the part oppoſite to the Wound, and proceeding towards it.

2. *Expulſive*, which conſiſteth but of one head, beginning from the bottom of the Wound upwards to its Orifice.

3. The *Retentive*, which is deſtinated to faſten Topical Remedies, and is made according to the figure of the part which is to be bound.

There are ſeveral ſorts of *Sutures*, but of the *Agglutinatives* the moſt approved is made with a needle held in the Right Hand of the Chirurgeon, wherewith he traverſeth the two ſides of the Wound, oppoſing a pierced Canulle, held in the Left Hand to the point of the Needle, which

which passeth through it, with its Thread, whereon is made a double knot, cutting the thread a little above it, and thence it is proceeded to the other stitches, remembring always to make the first stitch in the midst of the wounds length.

There is also another *Suture* called *Dry*, fit for wounds in the Face, and is made by clinging some pieces of Linnen upon it, which are, being dry, brought together with threads pierced through them.

The third necessary *Suture* is like to that, which Skinners make in sowing their Skins together, and is appointed for the Bowels and Gutts, when they receive any hurt.

The others I think needless to describe, these being doubtless the best, whereunto the ingenious Artist may add what he thinks fit.

The *temperature* of the affected part is preserved by a good Diet, and a convenient use of the Universal Remedies.

The first of these ought to be cold and moist, till the time obnoxious to accidents be passed. Spiced and salt meats

are hurtful; the Patient must drink Barley water, in stead of Wine; and wholly abstain from any violent motion of the mind.

The most usual universal Remedies are *Phlebotomy* and *Purgation*, which have virtue to refresh, divert and expel the humours, that might prove burthensom to the diseased part.

Amongst accidents, the most urgent is a too great flux of Blood, which must be carefully prevented, since it is the Treasure of Life and Strength.

It is performed by *astringent*, *refreshing*, and *agglutinative* Remedies; As,

Recipe, *Sealed Earth, and Bole Armenian, of each half an Ounce, Frankincense, Mastick, Myrrhe and Aloes, of each two Drachms, Flying Flower, one Ounce. Make a powder to be applyed with the Yolk of an Egg well beaten.*

If then Blood cannot be restrained in this manner, the *Vein* or *Artery* must be prest with the Thumb, till a *Thrumbus* be made; but if that sufficeth not, the flowing Vessel ought to be bound, and this

yet

yet not prevailing, we are to uſe *Eſcarotides*; as are *Burnt powder of Vitriol, and of Mercury, with a portion of pure burnt Alum*, leaving the Scars full to mature.

The laſt Remedy is the cutting off the flowing Veſſel, that its Extremities, withdrawing in the Fleſh, the ſame may ſtop its flowing. But all theſe Remedies will doubtleſs come out of uſe as ſoon as the *Stiptick Elixir*, to be bought at Doctor *Williams*'s, his Majeſties Phyſitian, will be known.

Pain, being commonly the cauſe of much weakneſs and fluxion to the wounded part, the ſedation of it ought to be carefully procured by expelling and lenitive Remedies, ſuch as is the following.

Recipe, *Diacalcitheos Plaiſter, four Ounces, Oyl of Roſes and Vinegar, of each half an Ounce. Let all be melted together, and applyed. For Lenitive, Dip the Bands and Compreſſes in* Oxicraton (*Water* and *Vinegar* is ſo called) *or uſe the following Irrigation.*

Recipe,

Recipe, *Oyl of Roſes and Myrrhe, as much as needs, and with a white of an Egg make an irrigation.* But if the pain continueth and is too intenſe, we muſt with ſome precaution uſe *Narcoticks*, whereof here is a Deſcription.

Recipe, *The leaves of Henbane, and Poppy roaſted under the Aſhes, of each three Ounces, Hogs greaſe and Oyl of Roſes, of each one Ounce, Saffron two Scruples. Make a Cataplaſm.*

There is often joyned to pain another Symptom, called *Convulſion*, which is defined a forced contraction of the *Muſcles* towards their *Origin.*

It is of two ſorts,

General, and

Particular.

The firſt whereof is divided in three *Species*; namely,

Tetanos, when the whole Body ſtands ſtiff, without being able to incline it ſelf.

The ſecond is called *Opiſthotonos*, when it is forced backward.

And

And the third *Emprosthotonos*, when it is contracted forward.

A particular *Convulsion* is when the *Eye*, the *Tongue*, or any other part instructed with *Muscles* is contracted, or deprived of its natural motion.

The Causes are *Repletion*, *Emptiness* and *Pain*. *Paul Amanus* refuting the *Elastick* virtue of *Willis* and its defects.

That which is caused by *Repletion*, is cured by *Evacuating Remedies*, anointing the Back, Neck, and contracted part, with this following *Liniment*.

Recipe, *Oyl of Camomile and Lawel, of each two Ounces, Oyl of Foxes, one Ounce, the Salves of Althea and Martii, of each an Ounce, Foxes Grease, an Ounce, Strong Water, an Ounce and a half, Wax as much as needs. Make thereof an Oyntment.*

That which proceeds of *Emptiness*, or *Evacuation*, is helped by the use of restorative meats, such as is the following Broth.

Recipe, *Lettice, Bourage, Purcelane, of each a handful, of the four Greater cold Seeds*

Seed of each half an Ounce., Barberries, a drachm. Boyl all with a good Chickin, and let the sick party take of it every morning.

That which cometh of *Pain* is Cured by Remedies contrary to the cause of it, and if it be poysonous, the wound must be instantly amplified, that the matter impacted may flow. And this *Alexipharmacon* poured into the Wound, *viz. Treacle* and *Mithridate* dissolved in *Strong water*, in a sufficient quantity with a little *Mercurial Powder*. *Scarified Cuppings* are also very useful to extract venemous matter, taking care likewise that the Patient, in that *Symptom*, have not his Mouth fast contracted, lest he bites off his own Tongue, as it often falls out, but may conveniently be prevented, by an Instrument called *Speculum Oris*, which ought therefore alwayes to be at hand.

Next to *Convulsion*, a *Palsy* ought to be prevented, and cured.

It is defined, *A Mollification of the Sinews, with the privation of Motion and Sense*, not indeed of the whole Body, but com-

commonly of one ſide. Its *Cauſes* are either *inward*, as the humours of either *Ventricle*, and eſpecially *Phlegm* obſtructing the progreſs of the *Animal Spirits* through the *Sinews*; or *outward*, as *Falls*, *Blows*, and ſuch other *Accidents*.

It is Cured by *Diet* and *Purgation*, whereunto the *Decoction* of *Indian wood*, will be very profitable, with this *Topical* Remedy of *Faventinus*.

Recipe, *Oyl of Laurel and Turpentine, of each three Ounces, Oyl of Lavender, and Petroleum, of each an Ounce, Malveſie, four Ounces, Strong-Water two Ounces, Pyreth. Pepper, Muſtard-ſeed, Juniper ſeed, Ivy, and Anacardium, pure Laudanum, of each an Ounce and half. Let all be pounded and mixed with Wine and Olives, let them boyl in a double Veſſel till the Wine be conſumed, a ſtrong expreſſion being made, add Galbanum, Bdelium, Euphorbium, Myrrhe, Caſtoreum, Bear, Duck, and Storks Greaſe, of each two ounces. Make a Salve in the Form of a Liniment, whereunto a little Wax if needs be, may be added.*

Exerciſe and Frictions are alſo very powerful to awake the part affected, and cauſe the motive Spirits to flow in.

There

There is another accident, when the Patient either by weakneſs, proceeding from the loſs of Blood, poyſonous Vapours, or the ſight of dreadful Objects, falls into frequent Swounds.

It is diſcerned, 1. When *Paleneſs* invades the Face, with a *Cold Sweat*.

2. If a *Coldneſs* of the whole *Body* be perceived.

3. And if the Party do *ſuddenly Fall*, when it is in the *Paroxyſme*.

It is prevented by caſting cold Water in the Diſeaſed's Face; but if it proceeds from too great *Evacuation*, the Patient muſt be ſoftly *collected* on the Ground, or on his Bed, and a little *Bread* dipped in *VVine* given him to taſte, whereat the Spirits may return. But if it proceeds from *Poyſonous Vapours*, Let the Patient drink out of a Spoon a little *Treacle* and *Mithridate* diſſolved in *VVine*.

That which comes of *Fear*, is eaſily cured, the *Object* being removed, with encouraging and comfortable *Admonitions*.

The loſs of *Blood*, *Pain*, and *Feaver*, whereunto Wounds are ſubject, do often diſtract the Patient, in a temporary Phrenſy

Phrenſy called *Delirium*, which is defined, *A temporary perturbation of the Phanſy, and other mental Functions.*

Beſides the Cauſes above mentioned, *poyſonous Vapours*, and a *Leſion* of the *Diaphragme* do not ſeldom effect its *Production*; this laſt having a plain communication with the *Brain*, by the *Nerves* of the ſixth *Conjugation.*

If it proceeds from an *Obſtruction of the Spirits*, the ſame *Remedies* muſt be uſed, as when the Body is ſubject to *Swounding*, but if it coms from an *Inflammation of the Brain*, *Diet* and *Purgation* muſt be inſtituted, and the *Hair* being *ſhaved*, the *Head* being bathed over with *Exorodine*, applying upon it the Plaiſter of *Diacalcitheos* diſſolved in *Roſe-water* and *Vinegar*, and *Sleep* provoked by the uſe of *Broths*, wherein you muſt boyl refreſhing *Herbs*, and a knot of *White-poppy Seed*; and pleaſant Company, diverting the Patient from other ſad thoughts and repreſentations of mournful things, may alſo be very conducible to his health and recovery.

Of

Of Wounds made by Fire Armes.

THE Induſtry of men ever clear ſighted to their own deſtruction, having for about 200 yeares ſince, found out a very ſpeedy way to it, namely Gun-powder, and fire-armes; Whoſe hurts being often waited on by other accidents, it obligeth us to treat eſpecially of their Curation.

They are either ſimple or compoſed, with dilaceration, diſtemper, and tumor. Their ſigns are commonly a round Figure, little effuſion of Blood, a ſwelling of the part, and a greeniſh livid colour.

In the firſt apparel, the wound ought to be dilated, if the wounded parts conformation can permit it; that unnatural Bodies if there be any, may be ſought out and expelled with the matter. In doing which, if it be poſſible, the patient muſt be ſcituated, as he was when he received the wound. After the extraction of ſtrange Bodies, we muſt prevent pain and fluxion.

The *firſt* by the repelling and lenitive Reme-

Remedies above deſcribed, and the Cataplaſme appointed for its ſedation.

The *laſt* by Diet and Purgation, whereunto Clyſters are commonly uſed, leſt Cathariks might cauſe too great an agitation of Humours.

Thence we muſt proceed to Suppuration, as in all other contuſed Wounds whereunto that which is called digeſtive and the following Oyl are moſt conveniently uſed.

Recipe, *Oyl of Violets, four pound, wherein boyl two young Cats, new brought forth, till the bones be looſed off, adding Earthworms duly prepared, one pound. Let them boyl together on a ſlow fire, adding Turpentine of Venice, and ſtrong-water, three Ounces. To be kept in a Glaſs, till there be occaſion to make uſe of it.*

But if there be any danger of *Gangrene*, we uſe profitably of *Egyptiacum* diſſolved in *Wine*, *&c.*

When the wound is brought to *Suppuration* deterſive Medicaments muſt be applyed, ſuch as is the following.

Recipe, *Water of boyled Barley, the juice of Plantain, Parsley, Agrimony, and of the lesser Centory, of each an Ounce, let them all boyl together, and in the end of the Decoction, add Turpentine of Venice, three Ounces, Hony of Roses, two Ounces, flower of Barley, three Ounces, Saffron, one Scruple. Mix all together, and make a cleansing Oyntment.*

Lastly, having care to prevent other accidents according to Art, the Wound must be brought to a perfect Cure and Sanation.

Of Gangrenes.

BUT since *Gangrene* is often a concomitant of Wounds, made by *Fire-Armes*, and other *Contusions*, it will not be amiss here to expound its Nature, Signs and Curation.

It is defined, *The mortification of a part affected with inflammation.* And is only distinguished from a *Sphacelus* by the more

more or leſs, this laſt being only when the part is quite mortified and dead. The onely Remedy being then its *Amputation.*

The general Cauſe of *Gangrene*, is a corruption of the parts natural Heat, by Cold, external Heat, want of Nouriſhment, ſtopping of *Tranſpiration*, or by the dreadful effects of ſome poyſonous ſubſtance.

Its proceeding is two-fold, either with ſome humours in flowing, or without it.

We have deduced the ſignes of it in the *Chapter* of *Impoſtumes.* And for its Curation, ſince that which hath its *origin* from the ſecond cauſe is the moſt general, and may in ſome meaſure be a Rule for Curing the reſt, Take theſe following Precepts.

If the Body be in the leaſt *Plethorical*, *Phlebotomy* and *Purgation* being celebrated, the *Air* by Nature or Art, ought to be cold and dry, and the Patients diet of the ſame temper.

Amongſt *Topical Remedies*, *Egyptiacum* boyled with ſome *Aloes* in ſalted Water, adding a little Strong Water in the end, is deſervedly much eſteemed; as alſo

the *Phadagenick* water, or the *Gray Salve*, which is made by adding a Drachm of corroding *Sublimate* to an Ounce of *Basilicon*, in the mean time, to defend the Body from the Influxion of *Morbifical Humors*, and putrid Vapours, the following defensive may be applyed on the diseased part, and often renewed.

Recipe, *Oyl of Roses and Myrtle, of each four Ounces, the juice of Plantain, Solanum, and Housleek, of each two Ounces, the whites of Eggs, five; Bole Armeny and Sealed Earth reduced in a subtil powder, of each an Ounce, with as much Oxycraton as is needful.*

If it be too *Intense*, and yeilds not to *Catharticks* and *Topical Remedies*, we are obliged to use actual *Causticks*. And *lastly*, if that will not serve, we must proceed to the part's *Amputation*, which is the only approved *Remedy* in a *Sphacelus*; wherein observe, that to stop the effusion of Blood, actual *Causticks* are almost out of Use, the binding of the Vessels being found more commodious.

Of

Of that Operation, see *Fab. ab Aqua Tendente*, in his *Chirurgical Operations*; but now the *Stiptick Elixir* of Doctor *Williams*, overcomes all other *Remedies*.

Where Bones are discovered, they use the *Tincture* of *Aloes*, extracted with *Spirit of Wine*, and to fortify the part, they boyl *Aromatick Herbs* in *Red* Wine, &c.

A

CHAP. IV.

Of Ulcers.

ACcording to our intended ſcope, this *Chapter* is dedicated to explicate the *Theorems* of *Ulcers*, and the manner of *Curing* them.

They are defined, *Solutions of Continuity, cauſed by the Mordacity of corroding humours, rather hurting in quality than in quantity.*

Their external Cauſes are the exceſſes of cold and heat, for, as ſaith the Phyſians Poet.

Sunt diverſa quidem mala frigoris atque caloris;
Sed tamen amborum ſimili nocet Ulcere virus.

The pain of heat and cold are different,
To make an *Ulcer* yet they both conſent

Where-

Whereunto is added the apposition of sharp medicaments, blowes, contusions and the touching of impure things.

Their differences are expressed in the following Discourse.

An *Ulcer* is either,

I. *Simple*, Varying either by,

First, Proper, differences, as

1. *Figure*,
2. *Quantity*,
3. *Quality*.

Whence it is termed,

Round,
Angular,
Strait,
Crooked,
Long,
Short,
Broad,
Deep, &c.

Or, *Secondly*, By differences *Common* and *Accidentary*. As

1. Its *Durance*,
2. *Aspect*,
3. *Generation*,
4. *Affected part*. And thus they are,

New,
Old,
Appearing,
Hid,
Incult,
Burnt,
Fleshy,
Nervous, &c.

II. Or *Composed,* either with
First, A Diseases *Cause,* whence it is called,

1. *Cachochymical,*
2. *Cathartick,*
3. *Poysonous,* &c.

Secondly, A Disease it self, as

1. *Intempery,*
2. *Tumor,*
3. *Incommoderation;*

Hot or *Moist, Phlegmous* or *Erisipelous, Burnt, Callous.*

Thirdly, Its *Symptoms,* whence it is called,

Gnawing,
Filthy,
Painful, &c.

A gnawing (*Depascence*) *Ulcer* is discerned by the parts *exesion, attrition, cavity*

vity and *hollowneſs*. The *ſtinking* exhaleth a putrid, unpleaſant and cadaverous ſmell.

The *Sordid* is diſcerned by the craſſity, and viſcoſity of its Excrements, and the ſoftneſs of the fleſh overgrowing it, whereunto if a hardneſs of the lips be joyned, it is deſervedly termed *Fiſtulous*.

A *Cancrous Ulcer* is horrible to look on, its lips being overturned are hard, livid and moiſt. That which is called *Diſcrative*, is cauſed by the humours *Intempery*; And *Cacoethes* is ſo termed for the difficulty of healing it. The *Catherick* receives nouriſhment of ſome broken or dirupted Veſſel, or proceeds from an evil diſpoſition of the whole Body.

Ulcers having had their beginning during a Diſeaſe, or before it, growing *livid*, *pale* or *dry*, plainly indicate the proximity of Death, their *livid* or *pale* colour being not only the ſign of *Cholerick*, or *Atrabiliary* humours cauſing them, but alſo manifeſting an extinction of the natural heat.

That which renders the Cure of *Ulcers*

cers difficult, is commonly a penury of Blood, the Bodies evil constitution, as also that of the Air, the sordidness of the *Ulcer*, and the rottenness of some Bones.

In *simple Ulcers*, *Desiccation* is only required, and the breeding of flesh in them, whereunto the red desiccative Salve, and *Unguentum Aureum* are convenient.

But in *compesed* ones, we must have an eye to the most urgent, then to the Cause, and lastly to the Disposition, without whose taking away, the *Ulcer* cannot be cured.

Pain is often an accident of *Ulcers*, whereunto must be provided as is declared in the *Chapter* of *Impostumes*, having a special regard to the humour causing it.

If there be any Bone corrupted, it must be touched with an actual *Caustick* of hot Iron, and such Remedies used to breed flesh in the *Ulcer* as are above declared, in doing which, two sorts of excrements do commonly appear, namely a thin matter, and a thick sordity, both which must be purged by drying and deterstive Medicaments.

Where-

Whereof take that mentioned in the former *Chapter* : But ſublimate Water or the *Brown Salve* of *Felix-Wurts*, are more powerful.

Then the *Cicatice* muſt be induced over the *Ulcer*, to which end the powder of *Burnt Alum* and *Caleanthum*, are wont to produce ſpeedy and wiſhed Effects.

A

CHAP. V.

Of Fractures and Diſlocations.

A *Fracture* or *Bone breaking*, is an accident ſo dreadful, that not without cauſe the *Phyſitians* Poet being about to ſpeak of it, makes this deprecation,

Infandum dictu, cunctis procul abſit amicis,
Sed fortuna potens omen convertat in hoſtes.

That curſed evil light on none but Foes,
And Fortune keep our Friends from the like blows.

A *Fracture* is defined, *A ſolution of continuity in the Bones*; and its Cauſes are all ſuch things as may break, cut, bruiſe, and quaſh; whereby are alſo to be underſtood falls from high places, and the like. Their

Their differences are manifold; for some are termed *perfect*, others *imperfect*, some are *simples*, others *composed* with *hemoragy*, *inflammation*, *gangrene*, &c.

They receive a common difference from their figures, *long*, *transverse*, *strait* or *crooked*. Whereunto are added, that which is called in *Greek Raphanidon*, when the bone is broken short in two pieces; *Cariedon*, when it falls in small Fragments loose from one another; and *Asphitidon*, when it is ground small as meal or flower.

A *Fractures* existence is known by a vehement pain of the affected part, the impotency of it, the change of its natural Figure, and chiefly by the vacuity which appears to the fingers touching it.

For the *Prognostick*, in moist weather, and in youth *Fractures* are sooner healed than in dry weather and in old age; But the precise time of the over-growing *Callus* cannot be positively assertained, that depending of the Body's, and *ambient Air's* disposition, as also of the Bone's thickness. Yet *Hippocrates* saies, the *Nose* is glutinated in three days, the *Jaws*, the *Clavicles* and *Ribs* in six, the *Cubit* in nine,

the

the *Brachium* in twelve, and the *Tibia* in fifteen; Which may be a Rule for the reſt.

When the Bones are broken near the Joynts, their motion is thereby rendred ſtiff, and difficult, and if there be great *Contuſions*, the part loſeth its motion, and the Patient is in danger of Death.

The Cure of *Fractures* and *Diſlocations* being in many reſpects one and the ſame, we ſhall ſpeak joyntly of them both in the end of this Chapter.

A *Diſlocation* therefore is defined, *The detruſion of a Bone out of its proper place.* And it is either *Simple* by it ſelf, or *Compoſed* with other Diſeaſes.

Its *Signes* are the ſame as thoſe of *Fractures*; the place of indiſpoſition and its Cavity being the chief differences; *Diſlocations* affecting but the Joynts, and cauſing but an imperfect *vacuity* in the *Diſlocated Place.*

If the *Head* be *luxated*, Death immediately follows.

Recent luxations are eaſier and ſooner cured than *Old* ones; thoſe that are *inveterated* are wholly incurable; and ſuch as are not far divided are eaſier reduced

duced in their Seat, than far ſeparated ones.

The common and general Cure of *Fractures* and *Diſlocations* is performed by,

1. Setting the Bones in their natural poſition.
2. Retaining them there.
3. Correcting the accidents.

The *firſt* of theſe is performed by extending the broken or diſlocated part from its *origin*, either with the Hands or ſome fit Inſtrument, then ſetting it in its due place ſo that no eminency or roughneſs be found to alter the figure of it.

The *ſecond* point is obtained by the application of reſtraining, and defenſive Plaiſters, whereof the moſt common is made of *Bolarmeni* dilayed in wine, and the *White of an Egg*; applying thereupon *Bands*, *Compreſſes*, and *Atelles* dipped in *Oxycrat*, or *Oxyradinon*, fitted to the figure of the diſeaſed part; And the Patient being in a convenient ſcituation the accidents muſt be corrected, as is declared in the former *Chapters*, according to the *Artiſts* beſt invention and ſolerty.

If

If the accidents do not oblige us to it, 'twil be enough to looſen the *Bands* at the end of three or four days, that fuliginous Vapours may be exhaled, and the part a little anointed with refreſhing Ointments, taking care to give it ſometimes a gentle motion, leaſt the Joint be rendred ſtiff and immovable, by the growing of a *Callus* thereon, and thus being ſometimes lookt to, the Cure is brought to its perfection.

CHAP.

CHAP. VI.

Of the Generation and Production of Man.

HAving thus far proceeded on our intended scope, this *Chapter* shall briefly express what is requisite to be known in the *Generation of Man*, and the way of helping Nature in the *Production* of the same, as her chiefest work and master-piece.

In the *Generation of Man* is exactly to be considered,

1. The matter out of which he is engendred, and the Instruments of *Generation*.
2. The *Place* thereof.
3. In what *Time* it is *perfected*.
4. And by what *Signs* its Conception, difference of Sex, and approaching time of being brought forth is known.

1. The *Matter* of his Generation is the *Seed of both Sexes* (whereunto the *Menstrua* were added by the *Antients*) proceeding from the purest Blood, diluted with a great deal of *Serum* (*Barbat. pag.* 49.) which is transmitted by (the *Instruments of Generation*) the preparing *Artery* to the *Testicles*, that are nothing but a *Conglomeration* of *Spermatick Vessels*, wherein the *Serum* is separated from the *Blood*, that is wrought and elaborated in the *Epidydemos*, or production of the *Spermatick Vein*, incumbent on the *Testicles*; whence it is carried through the *Parastates*, into the defering Vestel, and thence into the Spermatick Vessels; and according to some, the *Prostata's*, ending with them in the Conduit of the *Urethra*; where there is extant a *Valvul*, least the *Seed* should involuntarily flow through the *Yard*. The *Nerves* probably serving to render it fertile and vegetative by the effusion of *Animal Spirits*.

There are almost the same *Spermatick* parts in Women, except their situation, and the Womb, the *Receptacle* of the *Seed* and *Domicil* of the *Foster*; Yet *De Graaff* proveth that their *Testicles* are as an

Ova-

Ovarium, containing perfect *Eggs*. Thus new Wonders are daily found in the *Microcosm*.

2. The *Place* wherein he is engendred is the *Womb*; the *Foster* being found therein commonly gathered in a round, and wrapped in two distinct *Membranes*, the *Amnios*, and *Chorion*, (the *Allantoides* being only found in Brutes) wherein the three or four first months it is nourished, not of the *Maternal Blood*, as the *Antients* conceived, but probably of the *Chyle*, transported by the *Lacteal Vein*, and the *Arteries*, to the *Placenta*, where it is further elaborated, and thence partly carried through the *Umbilical Vessels*, to the *Port Vein* of the *Foster*, whence it floweth into the *Cava*, and finally to the Heart. The other part being transmitted by the *Arteries* of the *Membranes* into the Capacity of the *Amnios*, constituting there the pure *Colliquamentum*, mentioned by *Harvey*, which the *Foster* sucks after the fourth month, for its sustentation.

3. By the *Time*, which we have said ought to be considered in the generation of Man, it is to be understood,

First, That of his *Conception*, when the Seed of both Sexes is mingled in the Womb.

Secondly, That of his *Formation*, which is thought to begin the 7*th*. day, and to be perfected, if it be a *Male*, the 30*th*. if a *Female* the 40*th*. or 42. But it is more probable they are figurated about the same time, which cannot be so exactly determined.

Thirdly, No more than that of their *First Motion*, which was conceived, if a *Male*, to be in the *third Month*, and, if a *Female* in the *fourth*.

Fourthly, Neither can that of *Childbirth* be absolutely stated, the usual time being the latter end of the *ninth Month*, or the beginning of the *tenth*; though admit a *Latitude* from the *seventh Month* inclusively to the *eleventh* and above.

4. The chiefest Signes of *Conception*, are,

First, A little *Quivering* presently after *Copulation*.

Secondly, The *Retention* of the *Seed*.

Thirdly, The *Suppression* of the *Monthly Courses*.

Fourthly, A *Livescency* of the *Face*.

Fifthly,

Fifthly, A *Pain* and *Swelling* of the *Breasts.*

Sixthly, A *Diſtaſte of Meat.* Which *Signs*, or moſt of them appearing, one may judge of *Conception*, till a more certain one be diſcerned, namely the *Motion* of the *Foſter.*

5. Whether it be a *Boy* or a *Girle* is yet more uncertain, though ſome would conjecture by the following *Signs.*

If it be a *Boy* the *Mother* hath uſually a better *Colour* of the *Face*, and *diſpoſition* of the *Body*, the heat and good temperature of the *Child* adding ſomething to that of the *Mother*; for which Cauſe alſo they ſometimes powr a drop of the *Milk* upon a *Looking-glaſs*, or ſuch other even thing, and if it be of ſuch thickneſs as not to flow eaſily, they deem it to be a *Manchild*, otherwiſe not, the time of *Motion*, as is ſaid before, *indicating* nothing in this.

6. The *Signs* of approaching *Childbirth*, are a *ſmart Pain* from the *Navel* downwards, and thence reflected to the *Vertebra's* of the *Loynes*; though the *Moderns* deny their disjunction from the *Os Sacrum*,

The flowing of the *Excrementitious Humours* contained in the *Chorion*; the *Flanks* and *Rump* are thrust outwards; the *Secret parts* do swell and pain; the *Face* grows *Red*, a kind of feverish quivering seizeth the whole *Body*.

These *Signs* appearing, if the *Chirurgeon* be called, he ought then to prepare all things ready, and exactly observe what is to be performed,

1. Before the *Birth*.
2. In *Bringing forth*.
3. And *after* the *Birth*.

1. Before the *Birth* a special care must be had, that the *Air* of the *Room* must be *duly tempered* with a *moderate heat*, and then the *Woman* must be setled in a convenient and middle posiure, so that she neither lie flat on her *Back*, nor be yet sitting, but have her *Shoulder* and *Back* something raised, that she may have a free respiration, and more powerful endeavour to bring forth, her *Leggs* being as much separated as may easily be, and so bowed that her *Heels* may reflect to her *Buttocks*, which should also be something raised, she holding her self to a Staff fitly disposed cros the Bed, for that purpose, and

when she feeleth the most pain, she must be admonished to strive, as much as she is able, stopping sometime her Breath to express her *Foster*, whom the *Midwife* ought in the mean time to thrust gently from above downwards, having though a care not to put her in that labour before the time be come, least her Forces might leave her when they should be most needful.

2. In the *Birth*, it is to be considered, *If it be according to Nature*, which is when the *Foster* issueth forth instantly after the *Waters*, either the *Head* foremost or the *Feet*, all other manners rendring the *Birth* difficult, and being deem'd *against Nature*; But if the *Birth* succeedeth happily, the *Chirurgeon* ought to leave the delivering of the party to the *Midwife*, who ought to proceed in this manner; The *Child* being brought forth she ought presently to let follow the *Secundine*, but if they do not instantly succeed, she must gently thrust her *Hand* anointed with Oyl, or the following Oyntment, along the *Navel* in the *Womb*, and draw them out.

The said Ointment is composed in this manner.

Take Oyl of Lin-seeds, one Ounce, Oyl of Castor, half an Ounce, Nutmeg, three Drams, Laudanum, one Dram, and make a Liniment thereof.

And then free the *Child* of them, to that end, the *Midwife* must bind the *Navel* with a double thred two thumbs breadth from the *Belly*, neither too strait nor too loose, for fear of Accidents. The knot being fitly made, the *Navil* must be cut two fingers breadth beneath the knot, and a linnen cloth dipt in Oyl of *Roses* or of *Almonds*, wrapped about it, with another linnen yet over, least its coldness, till the time of its falling off, might cause the *Child* some pain and inconvenience.

And thus far ought to be proceeded in the *Birth*, when it happeneth without extraordinary difficulty.

But because a *Chirurgeon* is seldom called unless the *Birth* be difficult, here followeth the Method, which he ought to observe therein.

The *Birth* is rendred difficult chiefly by two Reasons.

First,

First, When the *Waters* which ought immediately to precede it, are evacuated too long before, whereby the *Womb* groweth dry and intractable, which is to be remedied by the following *Liniment*, wherewith the *Midwife* ought often to anoint the *Natural Parts*.

Take fresh Butter without Salt, washed in water of Mugwort, Mucilagines of Figgs, of Lin. Oyl, and of Althea, extracted with Water of Sabina, of each half an Ounce, Oyl of Flower de Luce, an Ounce, make a Liniment.

The following Powder is also esteemed for hastening *Child-birth*.

Take Cinnamon, Cassia fistula's bark, and Dictamel, of each a Dram and a half, and as much as the whole of white Sugar, make a subtil Powder thereof, and let the labouring Woman take half an Ounce of it at a time, in a decoction of Lin-seed or White-wine.

The following Drink is also much esteemed for the same purpose.

Take

Take broken bark of Cassia fistula, two Ounces, Red Peaſe half a handful, Boyl them with as much white Wine and Water as needs, add in the end two Drams of Sabina, and make a decoction; In the Colature add for each doſe a Dram of Cinnamon, and ſix grains of Saffron, which being taken, provoke the party to ſneeze, putting in her Noſtrils a little pulverized Pepper, or white Hellebore, and cauſing her, as afore ſaid to ſtop her mouth and Noſtrils.

The *Second* and chiefeſt reaſon rendering the *Birth* difficult is the diſcommodious Figure of the *Child*, coming forth otherwiſe than the *Head* or *Feet* foremoſt, which being perceived, the *Chirurgeon* ought to ſettle the Patient in a convenient manner (as before) and then gently bind her with a broad and ſoft fillet (*Faſcia*) in this manner; The ſaid fillet muſt firſt be applied to the *Neck*, and thence brought croſs-wiſe before over the *Shoulders* to the two feet, where being again croſſed, and in many folds about the *Leggs* and *Thighs* it ought to be conveyed thence again to the *Neck*, and there

there be firmly bound, ſo that the party can in no wiſe ſtir, and to procure it the better, ſhe may ſet the plants of her *Feet* againſt the Beadſtead, a couple of honeſt Servants keeping her *Knees* as much from one another as may eaſily be, this being ſo diſpoſed, to keep out the Ambient Air, and to perform the Operation more modeſtly, a warm double linnen cloth may cover the *Natural parts* and *Thighs* of the Labouring *Woman*, and the *Chirurgeon*, having firſt cut his *Nails*, and anointed his *Hand* and *Arm*, with the aboveſaid Liniment, muſt by degrees gently as may be, thruſt it into the *Womb*; where having explored the poſition of the *Child*, and whether it be alone or with another, or a *Mole*, he ought to turn it ſo, that he may come out the *Head* or *Feet* foremoſt, as aforeſaid.

But if this do not ſucceed, or that the *Child* be dead, which is judged, when neither the *Chirurgeons* Hand, nor the *Mother* can perceive it to move, and moſt ſure if the *Waters* are *flowed out*, and the *Secundines* are *come forth*.

Then he ought to proceed in this manner, having found one of the *Feet*, he

he ought to draw it out, and having bound it about with a ſoft and broad fillet, put it in again, then ſeek the other, which having found, draw it alſo out with his hand, and together with it, by the fillet, that which was bound before, then having drawn the *Child* out to the *Flank*, one of the *Arms* muſt be retruded along the *Neck* over the *Head*, the other being along the ſide, and ſo muſt be endeavoured to be drawn out.

It happeneth ſometimes that one of the *Hands* doth appear and is thruſt out, which muſt inſtantly be thruſt in again, and the *Child* turned to a more commodious figure; but if the *Womb's Oriſice* be ſo ſwelled that this cannot be done, chiefly if the *Child* be dead, the moſt convenient is to cut it, the *Bones* as deep in the *Fleſh* as may be, leaſt it might hurt the ſaid *Oriſice* of the *Womb*, and then ſo turn the *Foſter*, that it may come out as aforeſaid.

But if the dead *Child* be ſo ſwelled either by *Tumor* or *Winds*, that it cannot poſſibly come out, then a *Hook* muſt be ſtruck, if the *Head* be ſwelled under the *Chin*, in the *Mouth*, in the hollow of the *Eyes*,

Eyes, or beſt of all in the *Pole*, if the *Breaſt* under the *Claviculis*, and if in the *Belly*, in the *Falſe Ribbs*, or in the *Bowels* above the *Navel* (*Pubis*) ſpecially if the *Child* cometh with the *Feet* foremoſt; Others do endeavour to cut the *Foſter* in pieces in the *Womb*, with a crooked Knife and then extract it by pieces apart, in doing which, or the other operation, if it ſhould happen that the *Head* alone ſhould remain in the *Womb*, a double *Hook* or an Inſtrument called by *Pareus*, a *Gryphins Foot* muſt be thruſt in, with a hollow *Hand*, and ſtruck into ſome part of the *Head*, as aforeſaid, drawing it gently forth; and thus far can Art be extended in the *Birth*.

After the *Birth*, ought to come in conſideration, what muſt be done firſt to the *Mother*, and then to the *Child*; For the firſt, ſhe muſt be exactly kept from all cold and ambient *Air*, which to obtain more ſurely, it will not be amiſs to keep her *Leggs* ſome time a Croſs, for ſo the divided parts will beſides, be the ſooner conjoyned, elſe ought ſhe to be wrapped with a broad *Faſcia* over the *Epigaſter*, to the excluding of *Air* and

Blood

Blood, remaining in the *Womb*, and then take the Broth of a *Capon*, or a piece of roasted *Bread* dipped in good *Aromatick Wine*, besides, specially in *Winter*, the *Secundines* may be applied to the Region of the *Womb*, and in *Summer* the *Skin* of a *Sheep* newly flaid to the whole *Belly* and about the *Loynes*, which must be taken away about six hours after, the *Patient* having rested that time, and the *Hippogaster* must be anointed with the following *Oyntment*.

Take Sperma Ceti, two Ounces, Oyl of sweet Almonds and Hypericon, of each an Ounce and half, Goats Suet, an Ounce, Oyl of Mirrhe, an Ounce, and Virgin Wax as much as needs; Make an Ointment to be used twice a day.

About the *Navel* may be applyed a Plaister of *Galbanum* with some grains of *Zibet*, *Muscus*, in the middle, and about the whole belly *Gaulbiers Cloth*, described by *Ambrose Parry*.

But if the Patient be much tormented with Wind, the following Powder is esteemed excellent.

Take

Take preserved Anniseed, two Drams, Nutmeg and burnt Harts-horn, of each one Dram and a half, Dates-stones, three Drams, Aloes, Wood and Cinamon, of each two Drams; make a subtil Powder, whereof give her one Dram in a Cup of warm White-Wine.

As for the Child, as soon as the same is brought forth, it ought to be cleansed from all impurity,

With Oyl of Roses, or of Myrtle, which some do with warm Water, and some astringent Wine, and then anoint the Child with the said Oyls, taking special care whether the Child be not infected with a Chalky Matter in the Mouth, which is called the White Canker, for then it must be carefully cleansed with a little clout fastned to a stick, and dipped in a composition of Oyl of Sweet Almonds, Honey and Sugar, then having explored whether there be no vice in the conformation or construction of the bodies parts (for if there be any, it must be maturely corrected) the Child must be gently swadled, and laid in his Cradle.

If

If the Mother, or a Nurse will have her Milk stancht,

Take Oyl of Roses, and of Myrtle, of each three Ounces; Rose-Vinegar, one Ounce; mix them together, and anoint therewith her Breasts four times a day, and after the anointing, spread them over with Powder of Myrtles, applying thereupon the following Plaster.

Take Powder of Mastick and Nutmeg, of each two Drams, of Cypress-Nut, three Drams, of Myrtle and Wild Granate Flowers, of each one Dram and a half, Ireos of Florence, half an Ounce, Oyl of Myrtle, three Ounces, of Venice Treacle, two Ounces, and Virgins Wax, as much as sufficeth.

Some take a Spong dip'd in the decoction of Cumin Seed or Coriander laid in very strong Vinegar, and apply it to the Breasts as a secret.

Both may be much furthered by applying setting Cups between the Thighs,

Thighs, and on the Sides of the *Umbilick*.

As for the Rest, which is but little acceſſary to the *Doctrine of the Generation of Man*, the *Reader* is remitted to thoſe, that have treated ſpecially thereof, as *Capuraeins*, *Pareus*, &c.

CHAP. VII.

Of the Venerean Diſeaſe.

THE juſt puniſhment of God upon our ſins hath for ſome hundred years ſince, produced a *Diſeaſe* unknown, as ſome think, to *Antiquity*, called the *Venerian* or *French Pox*, which may be defined, *An Indiſpoſition compoſed of all other Diſeaſes and their Accidents, engendred by a contagious touch, but moſt commonly by impure Copulation, whence the Seed of ſeveral Men Fermenting, ariſeth a Venenous either fixt, or volatile acid Salt, having uſually its ſeat in groſs and viſcid Flegm, whence it proceeds to the Invaſion of the other Humours.*

It is divided according to its time and progreſs, in

Particular, and
Univerſal.

The *firſt* degree of the former being when

when there appeares *Venerean Ulcers* and *Cancers.*

The *second*, when there is a Virulent *Running of the Reins.*

The *Universal* is, when the Virulent *Salt* spreads it self through the whole *Body*, and infects most of the parts thereof.

Its *signes* are, an intense and vehement *Pain* of the *Joynts*; *Ulcers* in the *hidden Parts*; An *Inflammation* of the *Mouth*; *Pustles* over the whole *Body*, and specially on the *Forehead*; *Lastly*, *Knobs* and roughness of the *Bones*, and a *falling off of the Hair*, with other Accidents.

If the *Disease* be *Recent*, and the *Body* in *Youth* or *young Age*, the season of the Year being favourable, the *Cure* is easily performed, but if the *Disease* be *Inveterate* and *complicated* with many *accidents*; If the *Patient* hath in vain been under *Cure*, and begins to be *extenuated* by a *Consumptive leanness*, proceeding from a *Dissipation* of the *Naturall Moisture*, the *Disease* must be esteemed *incurable*, and only tried to be *palliated.*

The *Cure* of it is performed in *four* manners; Namely,

1. By the Decoction of *Guaiack wood*, *Sarſaparilla*, *China Root*, and *Saſſafras*, which is the gentleſt way, and fitteſt for the firſt degrees.

2. By *Unction.*

3. By *Plaiſters.*

4. By *Suffumigation*, rejecting that of taking *Mercury* inwardly, as noxious.

The *firſt* is thus reduced in *Act*, *A pound of Guaiac being cut in ſmall pieces, is decocted in Balneo Mariæ, with eight pounds of Conduit Water, to the diſſipation of the third part, and in the end ſome Cinnamon being added to it, the Patient muſt take of it ſomething warmed, five or ſix Ounces at his uſual Meals, keeping himſelf afterwards very warm, to provoke ſweat, which muſt be inſtantly wiped off; And thus uſing a very ſpare Diet, the ſame method muſt be continued, as long as the Patients forces can with facility ſuffer it.*

The *ſecond* manner is more effectual, if the *Diſeaſe* be *Recent.*

The Body being well diſpoſed and prepared, the Patient is ſhut up in a warm Chamber,

ber and Cloſet, and the Friction being begun, proceed from thoſe parts which pain leſs, to thoſe that are more painful, and having a ſpecial care to the quantity of Medicaments whereof the Indication is drawn from the Temper and Srength of the Patient, the Joynts and Emunctories of the noble parts are uſually anointed with the following Liniment.

Take prepared Quickſilver, ſix Ounces, Sublimate half a Dram, quick Brimſtone, half an Ounce, freſh Pork's greaſe, one pound, the yolks of three Eggs, Oyl of Laurel and Turpentine of each two Ounces, Old Treacle and Mithridate, of each half an Ounce, let a Liniment be made according to Art.

But I rather approve *Mercury* alone, mixt with Hogs greaſe, ſince it doth not expel the *Material Cauſe* of this *Diſeaſe*, by any *occult* or *ſpecifick virtue*, needing *Correctives*, but only by its motion, joyning naturally it ſelf with all *acid moiſture*, and, as *Mercury* diſſolved in the *Spirit* of *Nitre*, or *Aqua Fortis*, corroding the mouth and opening the Veſ-

ſels whence the Humors flow, till their *acidity* be evacuated.

But before the *Friction*, the *Body* muſt be judiciouſly prepared, for if dry ſubjects be not ſufficiently *humected*, the heat of the *Stomack ſublimates* the *Mercury*, whence proceeds a *Diarhœa*, with *Gripings* of the *Gutts*, and if it be ſtopt, there follows a *Conſtipation*, a *Feaver*, *Inflammation* of the *Throat*, or a *Phrenſy* with *Convulſions*, and ſometimes the party becomes *Deaf*, *Blind*, &c.

Contrariwiſe if *Moiſt Bodies* be not well exſiccated by *Sudorifick Decoctions*, the *Mercury* draweth with him to the *Throat* a great quantity of *Humours*, with ſwelling of the *upper Parts*, *looſeneſs* of the *Teeth*, *Exulceration* of the *Mouth*, and too great a *Flux of Blood*.

The *Diarhœa* is aſſwaged by the decoction of *Guaiac*, mixt with a little White-Wine, and taken for ſome days in the Morning, whereby the humours *Acrimony* is mitigated and ſweetned.

But in general thoſe evils are remedied by changing of Chamber and Linnen, precipitating the *Mercury* downwards by aſtringent *Gargariſms*, and *Clyſters*,

Clyſters, by letting Blood in the Foot, and chiefly by purgations, wherein ſome Salt of *Tartar* muſt always be added, to ſweeten and drive down the Humours.

Some do often ſwallow a *Golden Pill*, which becomes white, but it carries away the *Mercury* in ſo little quantity, that the other Remedies are not therefore to be omitted.

The end of Friction is to ſtimulate a *Chriſis*, which doth not proceed from Nature, without it be provoked and helped by ſome Medicament, whoſe quantity ought to be adapted to the vehementneſs of the Diſeaſe, and forces of the Patient; leaſt the Medicaments being too ſtrong, they caſt him into an incurable *Conſumption*, or being too weak, they do not eradicate the Diſeaſe, which afterwards is found much more intenſe, and incurable than before.

The third Cure is by Plaiſters, and Cerowins, and is ſomething ſlower than the former, but more convenient in Relapſes, and for the mitigation of pain, and the reſolution of

knobs and hardneſs; but becauſe it doth not act ſo ſpeedily, the beſt of Artiſts do joyn to it ſome Frictions. Beſides the Plaiſters of *De Vigo*, the following may be profitably uſed and applied on the parts mentioned in the Article of Friction.

Take of Melilot Plaiſter, and Saffron-Vinegar, of each half a Pound, Quenched Quick-Silver, ſix Ounces, Oyl of Laurel and Land Lavendel, as much as needs; Reduce all to the form of a Plaiſter.

The Scope of this Remedy, as of the former, is the procuring of a *Criſis*, either by inſenſible tranſpiration, *Flux* of the *Belly*, or *Urines*, but oftner and better by a flowing of the *Mouth*, which with the Gums and Cheeks is thereby as aforeſaid, often exulcerated, becauſe of the Humours Tenacity and Acrimony, and theſe *Ulcers* muſt by no means be repelled, but be mitigated by *Gargariſms*, compoſed of Decocted Barley, Cows Milk, and the like, which may dimi-

niſh

niſh the mouths inflammation, and waſh off the Humours ſticking to it; but if this accident, as it happens ſometimes, be too intenſe, that it threatneth an extinction of the natural heat, we muſt for ſome time defer the proper Cure to cohibit ſo pernicious a Symptom, according to Art. As for the Teeths looſneſs, it is cured by aſtringent Gargariſms, but more powerfully if the Gums be touched with *Aqua ſecunda* of the *Goldſmiths*.

The fourth manner by *Suffumigations* is not ſo much approved, becauſe of many evil diſpoſitions, which it leaveth in the Body. They nevertheleſs thus proceed to it; The Patient being ſeated under a Curtain, well and carefully extended, they caſt in a Chaffing-diſh a good quantity of perfume compoſed of *Cinabre*, mixt with *Brimſtone* and *Quickſilver*, whereunto is added *Iris* of *Florence*, *Frankinſence*, *Mirrhe*, *Juncus odoratus*, *Aſſa odorata*, *Terebenthine* and *Theriak*, and continue this *Suffumigation* till the Mouth begins to flow; and that is its *Criſis*.

This Diſeaſes Symptoms are ſo manifold

fold, that I think fitter to remit the *Reader* to such *Authors* as treat of it at large than to say but a part of what is needful to be known, though most may be referred to the General Cure of *Impostumes*.

CHAP. VIII.

Of some other Indispositions which are Cured by Chirurgery.

HAving thus far proceeded, we are to treat in the present *Chapter* of some other *Indispositions* cured by *Chirurgery*, whereof some requiring an experienced Artist, others yielding themselves to the meanest Capacities, and this little *Treatise* being written only for the use of discreet Beginners, we shall only speak of the following.

Of Baldness.

Baldness is a falling off of the *Hair* from the *Head*, caused either by defect of *Nourishment*, or the corruption of it; That which proceeds from *Old Age*, the *Hectick*

tick Feaver, *Burnings* or *Tinea*, is incurable; But that which may be cured is thus proceeded unto. The *Univerſal Remedies* being fitly inſtituted, the remaining *Hair* muſt be ſhaved, reſolving *Fomentations* uſed, and having cauſed the vitious humours to be digeſted by the application of *Cups* and *Leeches*, the *Head* muſt be waſhed in *Lye* made of *Iris*, and *Aloes*; laſtly, drawing Fomentations muſt be miniſtred, for the attraction of laudable Vapours. If it be cauſed by want of nouriſhment, the Head muſt be rubbed with a courſe Linnen Cloth, till it grows red, and if it proceeds from the *Venerean Pox*, the body muſt be anointed with Quick-Silver to a perfect ſalivation.

Of the Eyes.

The *Eyes* diſeaſes are manifold but their inflammation is the moſt common; their cauſes are External, as *Falls*, *Blows*, *Duſt*, *Smoke*, &c. or internal, namely a *deſtuxion* flowing to the *Eye*. It is known by the heavineſs of the Head, the Eyes redneſs, pain, ſwelling, and pulſation of its Arteries. It is cured by the ſame adminiſtration of univerſal Reme-

remedies as in *Phlegmons*, and the due application of Topical ones, whereof this Collire is of a perſpicuous effect.

Take Roſe and Plantain Water, of each half an Ounce, the mucilage of Gum Tragacant, two Ounces, and the White of an Egg; make a Collire to Diſtil luke-warm in the Eye, applying upon it a double Linnen Cloth dipped in the ſame Collire.

The Blood of Doves, Pigeons, or Hens inſtilled warm in the Eye mitigates the pain of it, and is its proper Balm. But if a Relapſe is feared, Cups applied on the Shoulders, and an Iſſue in the Pole are very fit to divert the Fluxion.

Tooth-ach.

There is ſcarce any pain equal to that of the Tooth-ach. It proceeds from the influxion of a hot or cold humour, or the Tooth being hollow or rotten, from the entrance of ambient Air, and the refrigeration of cold Meat, or Drink.

The Internal cauſes are taken away by a due adminiſtration of Univerſal Remedies, and if the pain proceeds from a hot

a hot cauſe, which is known by its ſharpneſs and a great pulſation of the Tooth and Temples, it is mitigated by remedies contrary to it, as to waſh the Mouth with *Granate juice*, *Plantain Water*, and a little *Vinegar*, all being boiled with *Roſes*, *Wild Granate* Flowers, and *Sumach*. If the Cauſe be the fluxion of a cold humour, which is diſcerned by a heavineſs of the Head and frequent ſpitting; the Teeth are profitably waſhed with *Garland-Libanotis*, *Sage Pierethre* decocted in *Wine* and *Vinegar*, whereunto is added a little *Strong-Water* and diſſolved *Treacle*. But if it proceeds from a rottenneſs of the *Tooth*, there is no better remedy than the drawing of it, and if it be but a Root, procure the corruption of it by a *Cotten* dipt in *Aqua-fortis*, having firſt tried the *Odontalgick Eſſence* of *Flubault*.

Of Phlebotomy or Blood letting.

Phlebotomy being an Operation neceſſary to be known of a beginner in *Chirurgery*, I have thought fit to ſay here ſomething of it. They define it, *An Inciſion of the Vein, evacuating the Blood and the other Humours contained with it.*

Before

Before it be administred, if there be any *Excrements* remaining of the former *Coction*, they must be evacuated by a *Clyster* or *Suppository* and thus when necessity requireth, or for precaution in persons neither too old nor too young, *Phlebotomy* is celebrated in the following manner.

The Patient being conveniently scituated, the *Chirurgeon* rubs the part, which is to be opened with his hand or a warm Linnen cloth, to cause the *Blood*, *attraction*, then the said part is bound with a *Fillet* a little above the place of *Incision*, which is designed by a touch of the Nail, and the *Operation* is performed with a fit *Lancet*, limiting its evacuation to the strength of the Patient and the curative intention. *Lastly*, the *incisad* place must be carefully bound, least an *Hemoragy* might happen.

Of Cup-setting.

When the matter is conjoyned and impacted, *Cupps* are commonly applied. I have commonly thus seen some proceed to operation, having something rubbed the *destinated place*, they set on it some kindled ends of *Wax Candle* fastened

ted on a *Counter* or ſuch other thing, and over it apply the *Cup*, which then draws very powerfully the *Humours* up; then taking them off, *Inciſions* are made in their circle with a *Lancet* or *Inſtrument* called *Scarrificatory*, and they are again applied in the ſame manner as before, laying afterward Plaiſters of *Diapalma*, or *Album Raſis* over the *Inciſions*, till they be *agglutinated*.

Of Leeches.

Where *Blood-letting*, or *Cup-ſetting* cannot be performed, *Leeches* are commonly applied either by making a little *Inciſion* in the skin, or anointing it with a drop of ſome other *Blood* or *Sugar'd milk*, for then they will ſtick faſt, and when you will make them eaſily fall off, touch but their head with a little *Aloes*, or *Salt*; and if you will know what quantity of *Blood* they have drawn, lay them in the things aforeſaid, and they will re-vomit it; beſides if you will have them to draw more than their capacity is, cut their poſteriour part, when they are well faſt, and the *Blood* will run through their Bodies, which alſo is ſtanched, if it flowes when they are ta-

ken away, by the half of a *Bean* or some *Burnt Linnen* applied on the little wound.

Thus far goes the first Edit; no part of the Book now Printed but the Title and that which follows. from this place.

Signs to be noted after Bleeding.

It is often required of a Chirurgeon after *Bleeding* to give an account, whethe *Blood* be good or bad, whereunto I have heard some answer very insignificantly, to avoid which, take the following rules. That *Blood*, that runs with vehemency and fast, sheweth that it is copious in the *Body*, and he is of a good strength; If being taken in the hand it is very hot it shews there is a *Feavour*, if it soon coagulates, it shews its viscosity, and if late, it's thinness, and that which flows weakly shews the weakness and infirmity of its *Origine*, the *Heart*.

It is better discerned if it be drawn into three Porringers, that which is bad doth not use to come out first, or last, but it issues promiscuously, where it findeth a passage. When it is better in the second or last *Porringer*, than in the first, it doth not therefore follow that all that was bad be come forth, it may lie hid somewhere flowing in the *Veins*;

for

for the mixture of humours happens only in the heart, that *Blood* only coagulates that hath had a moderate concoction, not that which is too much attenuated, or heated in a *Feavour*, nor that which is too serous in the *Menstrua* or in drunken people, whereof the first is dangerous, but the other not at all.

Thus a bad Concoction in the Stomack and a depraved Nutrition of the whole *Body* hinder the *Bloods* Concoction, whence you may easily conjecture of those evils.

In coagulated *Blood* is discerned a thin *Serum*, something red and some black, the *Serum* that is it's *Vehicle* abounding too much on the *Blood* is a sign of a bad concoction; and if there be too little, it is absumed by an inward heat. What appears red and black in the *Blood* proceeds from the *Air*, and signifieth little or nothing, for if any one turns it, the outward colour will soon be changed and altered.

That *Blood* which is thick and clammy is subject to obstructions, yet thick *Blood* is better than too thin, and none

can be called friable, for where should it acquire that drineſs.

The Bubbles on the ſides of the *Porringers* are not to be valued, but if there be any red ones in the middle, they ſhew a great heat in the *Body*, and the thicker the greater; if they be white, they diſcover a great *Viſcoſity* in the *Blood*.

Sometimes a *White Cruſt* or *Skin* is ſeen on the *Superficies* of the *Blood*, this is not a corruption of *Choler*, but proceeds from a bad Concoction in the ſtomack, wherefore you may then aſſuredly conclude the ſame to be ill affected; but if it be of ſeveral Colours, *Green* or *Yellow*, it ſhews a greater corruption of the *Blood*, and that theſe prodigies are to be attributed to a depraved *Chyliſication* may eaſily be evinced. The *Chyle* paſſes through the *Lacteal Veſſels*, is mixt in the *Veins* with the *Blood*, is elaborated in the *Heart*, where if it be not perfected, it remains unalterable in the *Veins*, and gives theſe marks of its corruption.

When a Party hath been let *Blood* in the *Foot*, in a *Veſſel* of hot *Water*, there

is found at the bottom a white ſubſtance like carded *Wool*, that is the *Fibrous* part of the *Blood*, which only ſtrengtheneth and nouriſheth the ſeveral parts, the reſt of the *Blood* being unfit for Nutrition, except it turns into that kind of ſubſtance. It is certain that in a dead *Ox* the *Spirits* and they vaniſhing renders the *Fleſh* unfit to be eaten, and theſe *Fibres* do give the ſigns of good or bad *Blood*, for if they be not *white*, but *Red* or *Green*, they hinder Concretion, if *Gray* Concoction, and if there be none, they portend the *Emaciation* and *Leanneſs* of the whole *Body*, their colour otherwiſe manifeſting in ſome meaſure that of the *peccant Humour*.

Of the Pulſe.

Having thus given the *Gnoſticks* to be diſcerned in *Bloodletting*, a *Surgeon* being often obliged to take upon him the Office of a *Phyſician*, when there be none preſent as it often happeneth in the Countrey, I have thought fit to add thereunto ſome Precepts about *Pulſation*, and *Urine*, whereby many things relating to the *Bodies* diſpoſitions may be diſcerned.

Pulsation is a motion of the *Heart* and *Arteries*, whereby *Heat* and *Blood* is imparted to the whole *Body*, the swelling of the *Arteries* is called *Systole*, and their subsidency *Diastole*.

The Chief differences of *Pulse* is that it is, 1. Either *Strong* or *Languid*. 2. *Great* or *Little*. 3. *Swift* or *Slow*. 4. *Equal* or *Inequal*. 5. *Soft* or *Hard*. 6. *Intermittent*. 7. *Feaverish*.

1. A strong *Pulse* which violently beats against the touchers *Fingers*, does ever more or less shew a great strength of the Patient, and that which is *Languid* contrariwise the decay of his strength and forces.

2. A great *Pulse*, when the *Artery* is much dilated, is a sign of good *Strength* and *Heat*, a little one the contrary, when the *Arteries* dilatation is hardly perceived signifies a languishing *Strength*.

3. A swift *Pulse*, that beats often and strongly, sheweth a great *Heat* of the *Heart* with *fuliginous Vapours*, and yet a strong *Faculty*, and a slow one is the sign of a weak *Faculty*, and much *Coldness*.

4. An equal *Pulse* is alike *Swift* and *Great* in every *Pulsation*, but an *Unequal* differs therein. This last is called 1. *Undous* or *Waving*, which signifieth a great *Moisture*, but a strong *Faculty*. 2. *Vermiculary*, like a crawling *Worm*, whereinto if the *Undous* doth change, it is very ill, for it sheweth that the *Forces* are decaying. And 3. *Formicant*, as creeping *Gnats*, which is worst of all, for it signifieth a suddain *Prostration* and absolute decay of *Strength* and *Forces*.

5. A *soft Pulse*, that is perceived with some yielding to the *Fingers* declares a great *Moisture* in the *Body*, and contrariwise, a *Hard* one is a sign of *Driness* or of the *inflammation* of the *Membranes* of the *Arteries*.

6. An *intermittent Pulse*, signifieth a very great *Weakness*, and if it intermits more then one *Pulsation*, it is *Deadly*.

7. A *Feverish Pulse* is that wherein the *Diastole* is not of equal durance with the *Systole*, and then if the *Diastole* be swifter or slower than it should be, the *Feaver* is a *Continent* one, but if the *Systole* be too swift it signifieth the

Feaver to be one of those, that are call'd *Putrid.*

Of Judgment by Urine.

In the *Analysis* of *Urine* there is found five principles, *Salt, Sulphur, Spirit, Water,* and *Earth.*

It's most considerable Accidents are its 1. *Quantity.* 2. *Colour.* 3. *Consistency.* 4. and *Contents.*

1. As to it's *Quantity,* it ought to be rendred in something a lesser, than the liquid *Aliments,* that were taken, then which if it be much less, except there be manifest *Obstructions,* it proceeds from some ill *dyscrasie* of the *Blood,* by reason whereof the *Serum* is not well separated from it, and if it be in greater *Quantity* then is *Natural,* it may proceed from a *Salt* too much exalted, and rendred *Fluid.*

2. As to its *Natural Colour,* and *Consistency,* it ought to be much like that of a good middle and well purified *Beer.*

But the signs taken from *Urine* being chiefly from it's *Colour,* Consistency and contained matters, we will here combine the two first together.

Urine

Urine therefore is either voided, 1. *Thin*, or 2 *Thick*; that which is voided *Thin*, expoſed to *Cold*, by ſubſidency of the *Contents* in its *Pores*, groweth *Thick*, but clears again being expoſed to the *Fire*, which that that is voided *Thick* never doth.

And again theſe *Urines* are either more or leſs, 1. *White*, depending of *Crudities* in the *Stomack*, whereby the *Saline* and *Sulphureous* parts of the *Aliments* are not ſo well digeſted, as to paſs through the ſecret paſſages of the *Body*, or 2. *Red*, by reaſon of *Heat* diſſolving the *Salt* and *Sulphur* of the *Blood* for *Oyl* of *Sulphur* tingeth *Red* whatever Liquor it is mixed with.

I. 1. *Thin Urine*, if *White*, one muſt firſt enquire 1. Whether the Party be ſick of a *Hot Feaver*, for in ſuch caſe you may pronounce a preſent or ſudden raving. 2. Whether he hath a pain in his *Back*, for then you may aſſure that he is troubled with *Obſtructions* of the *Kidnies* and *Gravel*, but if he be troubled with neither, then it is an exact ſign of *Crudities*, and you may conjecture that he is troubled with want

of

of *Appetite*, *Winds*, and *Grumblings*, with a pain of the *Stomack*, and is apt to fall into a *Lientery*, *Cachexy*, or *Leucophlegmacy*, but if it proceed from Fear or Sadneſs, you may judge the Patient to labour with *Obſtructions* of the *Spleen*, with beating of the heart, *&c.*

Note that theſe *Urines* are ever bad, but chiefly in *Acute* diſeaſes, and in the middle of a diſtemper, if they were before *Thick* and *Red*, for it ſhews Nature to be yet in a worſe condition than at firſt.

2. *Thin Urine*, if it be *Red*, the Patient muſt be asked whether he hath eaten *Rhubarb*, *Saffron*, or *Caſſia*, or whether he hath faſted long, for thoſe things do tinge the *Urine*, which if he hath not done, you may conjecture there is a *Hot* intempery of the *Heart*, *Liver*, and *Kidnies*, too much diſſolving the *Salt* and *Sulphur* of the *Blood*, wherefore you may ſay that the Patients *Body* is conſumed with Thirſt and Watching, that his *Hands* and *Feet* are very *Hot* and infeſted with *Scabs* and *Itch*, that he finds a bitter taſte in his *Mouth*, with *Vomitings*, and voids much *Choler* in his *Stools*.

3. If

3. If *Thin Urine* be *Yellow*, *Lemon*-coloured, *Golden*, or *Reddish*, it shews that *Yellow Choler* doth abound, and the beginning of a good Concoction.

4. *Thin* and *Black Urine* is esteemed Mortal, but *Willis* owns, he never saw any, and esteems it to be only some degree of *Yellow*, with the mixture of some other matter, according to which the Presage ought to be made.

II. 1. *Thick Urine*, if *White*, that is *Lacteous*, or of a *Horny* colour, it shews a very great *Crudity*, and therefore you may judge the Party to be troubled with the *Gout*, the *Cholick*, *Apoplexy*, or other *Cold* distempers, and if these Colours appear with some mixture and confusion, you may conjecture the Patient is sick of a *Quotidian* or *Semitertian*; besides in long *Agues* it signifies the *Crisis* will be by an *Abscess*, but in *Hot Feavers*, except it be on a Critical day, it portends death, or a very long Disease.

2. *Thick Urine*, if *Yellow*, or *Lemon*-colour'd, which comprehends the *Ruddy* and *Saffron* coloured, hath a greater or lesser mixture of *Choler*, and therefore

therefore signifieth, *viz.* 1. The *Ruddy*, a long but a *Salutary* disease, 2. The *Saffron*-colour'd, if it be splendid and shining, with a considerable *Heat*, a burning *Feaver*, or an exquisite *Tertian Ague*.

3. *Thick Urine*, if *Red*, shews an exuperancy of *Blood*, and if confused, a continual putrid *Feaver*, it presageth also the *Yellow Jaundies*, except it be voided on a Critical day, but if it continues to appear so, it portends death.

4. *Thick Urine* if *Black*, was thought to free one sometimes of *Melancholical* diseases, but they are also very dangerous.

5. *Thick Urine* if *Green* is a sign of very bad *Choler*, and if it last with *Thirst* and *Heat*, it is to be feared the Patient for too much *Dryness* may fall into a *Convulsion*.

Stinking Urine sometimes proceeds from the things we eat, as *Artichoaks*, *Sparagus*, *Garlick*, and the like, *&c.* Which having a gross *Sulphur*, and being also *Diuretick*, dissolving the *Texture* of *Urine* do make it stink; otherwise

Stinking

ſtinking Urine if it appears with ſome Matter, and the ſighs of Coction, declares an *Ulcer* of the *Bladder*, *Yard*, or *Kidnies*, but if it be voided without *Pain* or *Heat*, without ſign of *Coction*, and without *Matter* or *Blood*, it intimates a great corruption of the Upper parts.

The *Violet* ſmell of *Urine* after taking of *Turpentine* and *Aromaticks*, is becauſe they contain a pure and ſubtile *Sulphur*, which in the diſſolution of *Urine* by their *Diuretick* Virtue, appears to the Sent.

The *Contents* in *Urine* are either 1. *Adventitious*, or 2. *Natural*. 1. The *Adventitious* are called the mixt things in *Urine*, and are 1. The *Froth*. 2. *Melted Fat*, and 3. The *Crown*.

The *Froth* appearing without much ſtirring the *Urine*, is a ſign of *Windineſs* in the *Body*, and a *Diſtenſion* of the *Parts*, and if that *Windineſs* works on a *Viſcous Matter*, it may produce *Cholicks*, *Pains* of the *Stomack*, *Gripings* and the like.

The *Fat* ſwimming on it's *Superficies*, except it be diſſolved by the *Heat* of the *Reins*, or proceeds from the uſe of *Unctuous*

Sweet Medicines, as Oyl of Sweet Almonds, &c. shews that the Party is in a Consumption, either by a Hectick Feaver, a Phthisick, or a Marasmus.

The Crown, as they call it, is a circle about the Urine circumference in the Urinal, which is hardly perceived in the Urine of sound people, but in that of the sick, by reason of the variety of humours, it plainly appears, and then if White and Thin, it signifies the Mass of Blood to be Watery, if Thick and White, Phlegmatick, if Saffron-colour'd, Cholerick, if Red, burning with Heat, if Green, it indicates Prasine or Eruginous Choler, and if Blew or Black, Thick, Earthy, or Melancholick Blood.

There is also perceived in Urine, 1. Some small Caruncles that shew the Reines to be exulcerated. 2. Some Purulent Matter, viz. Red that declareth the same, and some White that more probably sheweth the Ulcer to be in the Bladder. 3. Some Scales like Bran, which in Thin Urine signifie a great Heat, scaling the Membranes, and in Thick a Scabbiness of the Bladder.

The natural Contents of Urine are

1. Above

1. Above a ſmall *Nebula* or *Cloud*, 2. In the middle an *Anavorema*, or *Thin ſuſpended Matter*, 3. And below the *Hypoſtaſis*, *Sediment*, or *Setling*.

Where Note 1. That if none of theſe appear in the *Urine* of ſick people it is very dangerous, 2. That if they appear the *Lower* is ever the better.

1. The *Cloud* hanging on high ſignifies a weak *Heat*, and in *Thin Urine*, the beginning of *Concoction*. 2. The *Thin ſuſpended Matter* in the middle declares a better *Heat*, though weak and infirm. 3. And both, with a *Sediment* very low, portends a healthful alteration, for it ſhews the ſtrength of *Nature*, and a good *Concoction*. That *Sediment* that is *ſmooth*, *White*, *Even*, and *United*, ſheweth a good *Concoction*, and if otherwiſe, the contrary; if it be ſandy it argues the *Gravel*, and that if *Red*, in the *Kidnies*, and if *White*, in the *Bladder*.

Hereunto we will add the Signs to be diſcerned in the *Urine* of a Woman big with Child.

The *Urine* of a Woman not with Child is naturally of a pale *Lemmon* colour, a little more drawing towards

White

White than that of a Man, with a considerable thickness, but that of a Woman with Child is almost *White* and *Clear*, on the Surface whereof there appears some small Bodies like *Flower* or white Starch, and if suffered, it setleth a pretty thick *Anaorema* like unto *Wool* finely carded mixt sometimes with small *Atomes* ascending and descending, by which thus moved the *Urine* is nevertheless not troubled; And this is what I have judged considerable and useful in the inspection of *Urine*, and what can be Practised honestly and without confusion; leaving the rest to such as endeavour to get a Name by imposing their Lies and Figments upon credulous people, who, I hope, will at last cease to be deluded by these *Sycophants*.

Of the Transfusion of Blood.

Having purposely omitted to speak of the great *Operations* of *Chirurgery*, as the *Paracentheſis*, the Cutting for the *Stone*, the taking away *Cataracts*, *&c.* as not fit to be undertaken but by those that are consumed in the Reading of such Authors as Write thereof at large, and that have frequently practised them under

troduction of good Masters, nevertheless the Transfusion of *Blood* from one *Animal* into another, and the *Infusory Operation*, or conveying of *Medicines* immediately into the *Veins*, being new Inventions: That may also be Practised upon Brutes by way of diversion, and may in time be of use in *Chirurgery*, I have presumed to give here some directions how to proceed in them.

The Transfusion of *Blood* is thus performed: Take the *Carotide Artery* of a *Dog*, or any other *Animal*, whose *Blood* you design to convey into the *Body* of another, separate it from the *Nerve* of the *Eighth Pair*, and discover it about an inch, then with a good strong *Ligature* that it may not slip, tie it in the upper Part, making also another *Ligature* in the lower part, towards the *Heart*, but with a slipping Knot, that may be made fast and loose, as there will be occasion; which two Knots being made, you must pass two Threads under the *Artery*, and having opened it, put therein a small *Quill*, stopping the *Artery* above the *Quill*, with some small thing fit for that purpose, tying it af-

terwards very fast, with the two Threads aforesaid, then you must uncover the *Jugulary Vein* of the other *Animal* about an inch and a half, and make a loose Knot on either end thereof, between which Knots, under the *Vein*, you must pass two Threads as you did under the *Artery*.

That done make an *Incision* in the *Vein*, and put therein two *Quills*, the one in the *Inferiour* part to receive the *Blood* of the other *Animal*, and carry it to the *Heart*, and the other in the upper part coming from the *Head*, through which the *Blood* of the other *Dog* (or any other *Animal*, as a *Lamb* or *Calf*) may flow into the *Porringers*, let those two *Quills* being tied very fast remain stopped till it be time to open them, all which being thus prepared, *The two* Dogs *must be so tied to one anothers* Side *that one of those two* Quills *may be inserted into the* Quill *of the* Artery, *but because the* Dogs Necks *cannot be brought so near together, two or three other* Quills *must be inserted in them, so that the* Blood *of the one may be conveyed into the* Body *of the others, (which may yet be better contriv-*

ed

ed if a bag of a Turkies Bladder joined to two Ducks Quills in this Figure, were made use of, then the Quill that descends into the Jugular Vein

of the second Dog is to be unstopt, as also that which proceeds out of the first Dogs Artery, and being joined by another Quill or two, the loose Knots must be untied, and presently the Blood will rush from the Artery into the Vein, as if it were a continuation of the same Vessel.

At the same time that the Blood runs thus into the Dog, you must also unstop the other Quill, that enters into the upper part of the Jugulary Vein, (having first made a Ligature about the Dogs Neck, or at least compressing the other Jugulary Vein with your Fingers) letting thus his Blood flow into the Porringers, or Basin, yet not all at once, but according as the Dogs Forces will permit; till the other Dog grows weak, cries out, falls into Convulsions, and lastly, lying on his Side dies. Then you must take the two Quills out of the other Dogs Jugulary Vein, and having tied it fast with a loose Knot, cut the Vein above the Orifice, which may

be safely done, because one of the Jugulary Veins *is sufficient to convey the* Blood *of the* Head, *and the upper Parts, (by reason of a great* Anastomosis, *whereby these two* Veins *are joined near the* Larynx) *which being done, the* Skin *is to be sewed, and the* Dog *let go, who will leap off of the* Table, *shake himself and run away, as if he had received no harm.*

Monsieur *Tardy* maintains the *Blood* to be more conveniently Transfused from a *Vein* into a *Vein*, than from an *Artery*, viz. *From the* Vein *of ones* Arm *in the* Vein *of anothers* Arm, *that is not so full of* Blood, *&c.*

The benefits that it is thought by some, may result from this Operation are, that Old Men and such whose Bodies are full of bad *Humours* and corrupted *Blood*, may thereby be preserved from those Evils, they are in danger of, and thus keep their natural Constitution: It is thought it will also cure those Diseases that proceed from the *Acrimony* of *Blood*, as are *Ulcers*, *Erysipelas*, *&c.* Neither is it conceived necessary to make in this Operation use of humane *Blood*, since that of a *Lamb*, *Calf*,

Calf, and the like, will produce the same effects.

Of the Infusory Operation.

The *Infusory Operation* is almost performed as the *Transfusion of Blood*, for the *Vein* of the *Arm* being tied with two *Ligatures*, there is syringed into it, either a purging or comforting Medicine, for a Purge the fittest are the infusion of *Antimony*, the *Rosin* of *Jalap*, *Agarick*, or *Scammony*, dissolved in Spirit of *Wine*. Amongst *Diaphoreticks* the best are the Spirit of *Salt Armoniack* ℥ß. with *Camphred* Spirit of *Wine* ʒj. and amongst *Cardiacks*, *aq. Vitæ Mathioli*, *aq. Antiepileptica*, *Hysterica*, and the like.

Of Embalming Dead Bodies.

Chirurgery doth not presently after Death desert the Body of Man, but continues its *Devoirs* thereunto, by preserving it, as much as possible, from Corruption, and though some severe *Mysantropes*, abounding in their own sense, (whereof we have now but too many) may Stigmatise the *Embalming of Dead Bodies* with the *Epithets* of Va-

nity and Superstition: Yet, both Ancient and Modern Ages, having found some satisfaction therein, witness the splendid *Mausolas's* of Antiquity, the *Egyptians Pyramids*, wherein their *Corps* and *Mummies* were preserved, and the usual Practise of the most polite Nations of the World to this day, I have thought fit to finish this Treatise with some directions how to *Embalm Dead Bodies*, and to keep them a considerable time from decay and Corruption.

The Body *being washed and shaved (except it be desired to be preserved with the* Hair*) you must draw, with your* Incision Knife, *a Line from about the* Navel *to the Inferiour part of the* Sternum, *crossing it by another* Tranversal *Line in the middle of it, unbowelling thus the* Chest *and lower* Belly, *remembring to lay the* Heart *aside, it being often to be disposed of and buried apart; then with your* Incision Knife *cut a* Circular *turn about the* Head, *a little above the* Forehead, *and having with a* Saw *divided the* Skull, *take out the* Brains *to be Interred with the* Entrails *or* Bowels, *which being done make long and pretty deep incisions along the*

Arms,

Arms, Thighs, Legs, Back, Loins *and* Buttocks *upon, or as near as you can, to the great* Veins, *to make the* Blood *easier issue forth, which otherwise would be apt to corrupt and hasten the decay of the whole.*

Then take a Sponge *diped in* Brandy *and strong* Vinegar, *wherein must have boiled* Wormwood, Aloes, Coloquint, Common Salt *and* Alum, *and therewith wash the whole* Body *several times over, and afterwards fill the three* Cavities *of the* Body, *and all the* Incisions, *you have made, with the following* Aromatick *Powder.*

Take Powder of Roses, Camomil, Melilot, Balm, Mint, Dill, Sage, Lavander, Rosemary, Marjoram, Thime, Wormwood, Cyprus, Calamus Aromat. Gentian, Ireos *of* Florence, Assa Odorata, Cloves, Nutmeg, Cinnamon, Storax Calamit. Benzoin, Myrrh, Aloes, *and of all the* Sanders, *in a sufficient quantity, pound thereof grosly what can be pounded, and having mixt all well together, fill therewith, as aboveſaid, the* Cavities *of the* Body, *and the* Incisions *made therein; afterwards apply that part*

of the Head, which was Sawed off, sewing it to the other part, sowing also the Incisions and other divided Spaces, that nothing of the Aromatical Species do fall out, which being performed, aneint the whole Body with Therebintine, dissolved with Oil of Roses and Camomil, adding if you will, some Chymical Aromatick Oil, then let the Corps be strewed over again with the aforesaid Aromatical Powder, wrapping it in a Clean Linnen, and afterwards in a Searcloth.

All this being done, the Corps must be put into a Leaden Coffin, well sawdred, and filled up with sweet dry Herbs, and then safely closed up.

Note that to make the *Brandy* and *Vinegar* penetrate the better into the *Corps*, some drench *Clouts* therein, applying them upon it, and where the *Species* to make the *Aromatical Powder* cannot be had, as it often happens in *Camps* and *Sieges*, its defect may be supplied with the *Powder* of quenched *Lime* and *Common Ashes* made of *Oak-wood*.

And this is the usual way practised for Embalming; But the Artists of our Age have found a manner to preserve

Dead

Dead Bodies without Unbowelling them, amongſt whom Mr. *Werner*— an *Apothecary* of *London*, hath lately publiſhed his *Skill* therein, which I would be far from diſcouraging, but the firſt Invention thereof is due to that renowned Anatomiſt Mr. *De Bills* in *Holland*, who for many years ago thus preſerved ſeveral Subjects for the *Anatomy Chamber* at *Leyden*, ſetting his ſecret at an extraordinary Price, *viz.* 40000 *Gylders* to divulge it, which I have nevertheleſs ſince by accident obtained, it having been communicated, for a far leſſer, though conſiderable Sum, to that moſt curious Prince *Frederick* the Third, King of *Denmark*, under the name of *Secretum Bilſianum*, wherefore I the more eſteem and value it.

FINIS.

Dead Bodies without Unbowelling them, amongst whom Mr. *Warner* — an *Apothecary* of *London*, hath lately published his *Skill* therein, which I would be far from discouraging, but the first Invention thereof is due to that renowned Anatomist Mr. *De Bills* in *Holland*, who for many years ago thus preserved several Subjects for the *Anatomy Chamber* at *Leyden*, setting his secret at an extraordinary Price, *viz.* 40000 *Gylders* to divulge it, which I have nevertheless since by accident obtained, it having been communicated, for a far lesser, though considerable Sum, to that most curious Prince *Frederick* the Third, King of *Denmark*, under the name of *Secretum Bilsianum*, wherefore I the more esteem and value it.

FINIS.

549. c. 19
2

THE ART OF ROULING AND BOLSTRING,

THAT IS

The Method of Dreſſing and Binding up the ſeveral Parts,

ACCORDING

To their Reſpective FIGURES and CONFORMATION;

As it is Taught

By the beſt MASTERS at *Paris*, and other Places beyond *SEA*.

Never before Printed.

London, Printed in the Year, 1682.

THE ART OF ROLLING AND BOLSTRING,

THAT IS

The Method of Directing and Binding up the several Parts,

According to the Respective FIGURES and CONFORMATION;

As it is Taught

By the best MASTERS at Paris, and other Places beyond SEA.

Never before Printed.

London, Printed in the Year, 1682.

THE ART OF ROULING AND BOLSTRING.

HAVING in the Chapter of *Wounds* said something of the three Sorts of *Bandages* in General, my design is now to describe in this Treatise such Dressings and Bindings up of Parts as are daily Practised, to serve as a Manuduction to them, that will learn and exercise themselves therein, as also to be, as it were, a Local memory to those that have learnt them of the Masters themselves; and because most of

of the Dreſſings that are deſigned for the Head are more curious then uſeful, I will paſs them under ſilence, and only deſcribe thoſe, that are daily Practiſed; It is not that I do deſpiſe any of them, but not to over-burthen the Learners Memory, who often finds it difficult enough to remember thoſe, that are moſt neceſſary: Wherein, as alſo in the ſequel of this Treatiſe, it is to be Noted that what we call the Heads of a Binding are the Ends thereof, with that portion of the *Rouler*, that is next to them; which having premiſed, I will begin by dreſſing that of the Head which is called

The Kerchief, or Coverchief.

The moſt uſual Dreſſing of the Head hath taken its name from the uſe it is employed unto, for though there be many other Dreſſings of this part, it is the moſt frequently put into Practice. It is made with a *Napkin* folded double, whereof one of the Ends is about three Fingers breadth longer then the other, it is applied on the

Head,

Head, the upper ends that ought to be the shorteſt are carried and held under the *Chin*, and the undermoſt are turned over them to be tied in the *Pole*, and then one ties the ends that are held under the *Chin*, croſſing them to faſten them on the ſides of the Head.

For the Face.

For the *Forehead* and *Eyes* they uſe only a Triangular or three Corner'd *Handkerchief*, made of a four ſquared one, doubled from one Corner to the other, and for the *Cheeks* and *Ears*, they make a Binding like the Letter T of this Figure.

The two Ends marked *a. b.* turn about the *Head*, and the End *c.* hangs upon the *Cheek* or *Ear*, that is hurt and ought to be carried under the *Throat*, and behind the *Ear* oppoſite to be faſtned to the Night-*Cap*.

For the upper *Lip* there be two Dreſſings, the one hath four *Heads* and ſerves

serves only to contain the *Medicines*, and the other hath but two which is to *Agglutinate*.

The first being applied to the upper *Lip*, by that part that remains whole the lower ends are carried over the others to the *Vertex*, and the upper ones are conveyed over the *Ears* to the *Occiput* that all may be fasten'd to the Night-*Cap*.

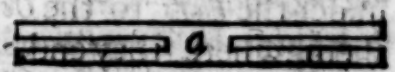
The Second may serve for the *Hair Lip*, and is thus made, one must apply the middle of a narrow *Band* to the *Occiput*, and carry the two Ends from one side to the other under the *Ears*, to reach unto the upper *Lip*: Then one of the ends ought to go through the other by a slit made in it, just under the *Nose*, and changing them of *Hand*, the Wound may be brought together by pulling them as much, and as little, as will be needful, afterwards both Ends are conveyed over the *Ears* to the *Vertex*, and over the *Forehead*, to be there fastened.

Ban-

Bandages and Dressings for the Fractures of the Nose.

It is usual to Treat of *Fractures* before *Dislocations*, and to follow this order I will begin first to describe the Binding up of *Fractures*, and will continue to those of *Dislocations*.

The *Fracture* of the *Nose* being well reduced, one must put thereon a *Compress* or *Bolster* of this Figure, and thereon you must apply a *Band* with four ends: There be some that put over the *Bolster* a piece of *Pasteboard* of the same Figure, but I cannot believe it doth any good, and I would rather apply on either side of the *Nose* a small and *Oblong Compress*, to fill the Spaces that are hollow there, under the *Bandage*, that must be of this Figure;



the piece marked *a* is applied upon the *Nose*, the undermost Ends crossing the uppermost are conveyed to the *Vertex*, and afterwards before the *Forehead*,

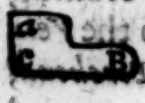
and the uppermoſt are lead under the *Ears* to the *Occiput*, and alſo thence before upon the *Forehead*.

For the Fracture of the Neather Jaw.

According to the place where the *Neather Jaw* is broke, the Dreſſing is to be made, for it is otherwiſe made for the *Angles* then for the *Chin*, when the *Fracture* is at the *Chin* then they make uſe of a *Compreſs*,

and a piece of *Paſteboard* of this Figure, and that Dreſſing is kept up with a Binding called the *Sling*, which hath four Ends, and is compoſed of a *Rouler* two Fingers broad and four or five Ells long, which is applied as the former *Ligatures*, from the *Lip* and the *Noſe* conveying the lower ends, croſſing the upper ones to the *Vertex*, and the undermoſt under the *Ears*, to the *Occiput*, faſtning them where they end.

If the *Fracture* happens to the *Angle* or *Side* of the *Jaw*, the *Plaiſter*, the *Compreſs* and the *Paſteboard*



muſt be cut in this manner, the place *a* is to be applied near

near the *Ear*, and the *Temples*, that which is marked *c* comes down on the Corner of the *Jaw*, and that part that is marked *B* is continued to the *Symphysis* of the *Chin*, one must also put a *Bolster* in length along the Side of the *Jaw*, and under the *Throat*.

For the Fracture of the Upper Jaw.

Suppose the *Fracture* be on the *Right Side*, then must you apply the first end of the *Rouler* to the *Occiput*, carrying it above the right *Ear* to the *Parietary Bone* of the same *Side*, thence to the *Bregma*, to the left *Temple*, and under the *Throat*, then ascend by the right *Temple*, and having past upon the *Fracture*, cross the other end upon the *Bregma*, continuing to convey it over the left *Parietary* to the *Occiput*, under the right *Ear*, and under the *Throat*, thence ascend by the left *Temple* to the *Bregma*, come down to the *Occiput* by the right *Parietary*, under the left *Ear* and under the *Throat*, pass upon the *Fracture*, and ascend to the right *Temple*, cross the other *Heads* that are on the *Bregma*, come down by

the hinder part of the left *Parietary*, to the *Occiput*, under the right *Ear* pass over the *Chin* to make as a *Chin*-Cloth, go on under the left *Ear* to the *Occiput*, ascend by the right *Parietary* to the *Bregma*, to the left *Temple* and under the *Throat*, ascend to the right *Temple*, cross the *Bregma*, upon the left *Ear* to the *Occiput*, upon the right *Ear*; and make your *Circulary* turn over the *Forehead* to strengthen the *Rouling*.

All these turnings that we have made include a *Semi-Rhombus*, a straight *Beam*, the *Chin* Cloth, and finish also by a *semi-Rhombus*. This *Rouler* ought to be three Fingers broad and about five or six Ells long.

For the Fracture of the Clavicul or Throat Bone.

Having reduced the *Fracture*, you must make an *Embrocation*, and apply on the *Throat Bone*, a round oblong *Plaister*, and two small oblong *Compresses* the one above, the other underneath, then a larger one that may cover the two former, over this *Compress* or

Bolster

Bolster you must apply a piece of *Pasteboard* of the Figure of the *Clavicul*, then an other *Bolster* long and narrow, that must be applied a-cross the *Pasteboard*, where the *Bone* did most rise; and lastly a large *Bolster*, that may cover all the Dressing making then a Rouling that is either the *Spica*, the *Cape* or *Cloak*, or both together.

The Spica for the Fracture of the Clavicul or Throat Bone.

It is made with a *Rouler* four or five *Fingers* broad, and seven or eight *Ells* long, one must apply the first *Head* of the *Rouler* under the left *Arm Pit*, (supposing the *Fracture* to be in the Right *Clavicul*) and it is continued over the *Breast*, crossing over the *Bone* that is broke, and as much of the *Neck* as one can conveniently; thence pass on the *Acromium* or *Shoulder* pitch, and come down the back way under the *Arm Pit* of the same Side, ascend then by the fore part over the same *Acromium* to make a *Chiasmus*, that is the Figure of the Greek Letter X by crossing the o-

ther part of the *Rouler* to come down to the left *Arm Pit*, and croſſing the *Back*, convey the *Rouler* before the *Breaſt*, upon the *Acromium* of the *Right Side*, a little lower then the firſt turn, deſerting a little the *Neck*, continuing thus to come down over the *Back*, and under the *Arm-pit* of the ſame *Right Side*, then aſcend upon the *Shoulder-pitch* to make another X a little below the firſt, continuing ſtill the ſame turnings, as long as ſhall be needful. Then one muſt thus make the *Gyranium* or *Circular* turn, when the *Rouler* paſſing before the *Breaſt* is carried upon the right *Acromium*, come down the back-way under the *Arm-pit* of the ſame Side, and make two *Circulary* turns in the upper part of the *Arm*, the firſt about the end of the *Deltoides*, and the ſecond higher, almoſt on the head of the *Humerus*, to draw the *Clavicul* ſomething backward conveying the end by the hinder part under the left *Arm-pit*, over the *Breaſt* upon the right *Acromium*, under the *Arm-pit* of the ſame Side, over the *Breaſt*, and under the left *Arm-pit*, biaiſing then behind the *Back*, to come to

the

the right *Shoulder*, and come down before the *Breaſt* to make as it were, a ſingle or double Scarf.

You muſt not forget before you make the Rouling to put a ſoft round *Ball* under the *Arm-pit* that is hurt, and a *Bolſter* under that which is not.

The Cape or Cloke for the Fracture of the Throat.

The *Spica* being done there are ſom e that apply again the *Cape* or *Cloke* over it, it is made with a two headed *Rouler*, one muſt begin by the middle of the *Rouler*, above the middle part of the *Clavicul*, conveying the one Head before the *Breaſt* and the other behind the *Back*, that before muſt be carried under the left *Arm-pit* (ſuppoſing ſtill the *Fracture* be on the *Right Side*) and conveyed over the *Back* to engage the hinder Head that muſt be held about the lower end of the right *Omoplate*, the ſame muſt be continued till it come under the right *Arm-pit*, and the Head that hath been engaged behind the *Back* muſt be overturned above the *Shoulder*,

and the *Clavicul* from the back part forward, then overturning the other Head that must always make the *Circulary* turn, it must be engaged and overturned from before backward, continuing thus to *Circulate* about the *Body*, and overturn as much as will be thought fit.

For the Fracture of one or more Ribs.

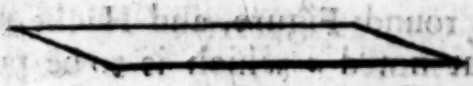
This *Fracture* when it is reduced doth not require a great Dressing, they only apply upon it a *Plaister* a *Bolster* and a *Pasteboard* all of a round or square and oblong Figure, and for a Binding they use the *Napkin*, and the *Scapulary*, that is not only convenient for the *Fractures* of the *Ribs* but also to all indispositions of the *Breast*, and of the lower *Belly*, the last being only a kind of narrow sleevless Shirt.

Of the Fracture of the Rotula or Whirlbone.

If the *Rotula* be *Fractured* cross ways, and that the upper part be ascended upwards, after it is sufficiently depressed, a little *Rouler* is applied on the middle a little above the said *Rotula*, carrying the two Heads under the *Hams*, crossing them, and coming again over the

Rotula, then return under the *Hams*, make a *Chiasmus* and bring them to cross under the *Rotula*, returning to finish under the *Hams*, after this little Binding which keeps the *Rotula* in a posture, you must make *Embrocation*, and apply a *Plaister* and a *Paste-board* of this Figure, and afterwards, you must take another small *Rouler*, wherewith you repeat the same turns, as you did with the other.

Besides this you must apply your *Circulary Bolsters*, whereof the one ought to be applied on the middle cross the *Rotula*, and to come cross under the *Hams*, and afterwards is gathered under the *Rotula*. The other contrariwise ought to be applied under the *Rotula* to cross likewise under the *Hams*, and finish under the *Rotula*, afterwards the Rouling is made, which is called the *Tortoise*; here is the Figure of the *Circulary Bolsters*.



The

The Tortoise for the Rotula or Whirlbone.

This Dressing is made with a *Rouler* three *Fingers* broad, and seven or eight *Ells* long; they begin it by making three turns on the lower part of the *Thigh*, and they carry the *Rouler* biaising over the *Rotula* to come under the *Hams*, and make two turns on the upper part of the *Shin* and *Brace Bone*, afterwards they ascend biaising over the *Rotula* crossing the other Head and making two turns on the lower part of the *Thigh*, then come again sloping upon the *Rotula*, to make two turns on the *Shin Bone* or *Tibia*, and continue coming down and ascending till the *Rotula* be all over covered, observing the *Spica* must appear in the upper part, that being done, if the *Rouler* be long enough, it is employed to hold up the *Pasteboard*, but if it doth no suffice, one must take another, two or three *Ells* long, these *Pasteboards* are to keep the *Leg* and the *Rotula* firm, the one being of a round Figure, and Hackt round about noted *a* which is to be put on the *Rotula*, and the other Square markt *b* to put under the *Hams*, and with the re-

remainder of the *Rouler*, wherewith you have made the *Tortoise*, you must make an *Ascia* from below upwards, ingaging those *Pasteboards*, or if it be not long enough, you may take another *Rouler* as we have already laid: Here is the Figure of the *Pasteboards*. If the *Rotula* were broken longwise, one need not use all the Dressing aforesaid, but having made the *Embrocation*, apply the *Bolster* and the *Plaister* made like a *Star*, and make an *Agglutinating Bandage* with a two Headed *Rouler*, whereof the one Head must be slit to give a passage to the other, to this end you must pass the middle of your *Rouler* under the *Hams*, and bringing the Heads from each side, pass through the slit immediately over the *Rotula*, changing *Hands* to carry them under the *Hams*, making as many turns as shall be needful, and with one of the Heads engage the *Pasteboard*, as in the *Tortoise*.

The Fracture of the Leg without Wound.

The Dreſſing of the *Fracture* of the *Leg* is a Pattern for that of the *Thigh* and that of the *Humerus*, all the difference is, that, for the *Thigh* after the *Plaiſter* one muſt apply on the hind part of the *Femur* a long *Bolſter*, five or ſix times double, to preſerve its natural Figure which is *Gibbous* before, and hollow underneath.

The Dreſſing of the *Humerus* and of the *Arm*, differ not from that of the *Shin-bone*: but that one needs not therein apply any *Straw Bolſters*, called *Fanons*, as is uſual on the ſides of the *Leg*.

The *Fracture* of the *Leg* being well reduced, they make an *Embrocation*, and apply a *Circulary Plaiſter* armed with ſome *Aſtringent*, then they have four *Roulers* each three *Fingers* broad, whereof two muſt be two *Ells* and a half long, one of three *Ells*, and the laſt of three *Ells* and a half, one muſt begin with one of thoſe that are but two *Ells* and a half long, laying the Head of the *Rouler* on that ſide whence the *Bone* is forced out, making three *Circulary* turns

over

over the *Fracture*, and finiſhing above it, then with that, which is three *Ells* and a half long, begin alſo upon the *Fracture*, and making there a turn and a half come downwards to turn about the *Foot*, and then aſcend in turning to finiſh above where the other ended, theſe two *Roulers* are called *Hypereſmides* or upper *Roulers*, then one muſt apply a filling *Bolſter* five Stories high, that is to ſay, that be thus thick below and ſingle above, and after this *Bolſter* four others longwiſe, a *Fingers* breadth diſtant from one another, that muſt be held by another plain *Circulary Bolſter*; that being done one muſt apply the *Epideſmides* or *Under-bands*, the firſt that is applied is that which is three *Ell* long, one muſt begin at the lower part of the *Leg* oppoſite to the other, and aſcend upwards to finiſh there, and the laſt muſt begin where this hath ended, oppoſite to it, and be conveyed downwards.

All theſe *Roulers* and *Bolſters* ought to be dipt in *Oxycrat*, then you muſt apply your four *Atelles* or *Splints*, garniſhed with Flax or Linnen, tying them with

with three or four ſmall Strings, inſtead whereof ſome make uſe of two Fillets tied with Strings, then one muſt add the *Juncks* (that are *Bolſters* made of *Sticks* and *Straw* wrapt over with *Linnen* almoſt of the length of the *Leg*) applying ſoft *Compreſſes* to the *Ankles* above the *Ankle-bones*, and on the ſides of the *Knees*, the *Juncks* muſt be tied on the outward ſide, remembring alſo to put a *Bolſter* under every tie in the fore part of the *Leg*, and a round one bored under the *Heel*; after this you muſt put a Sole of ſtrong *Paſteboard* under the *Foot*, through which Sole there muſt paſs a Ribbon, the two ends whereof croſſing over the *Foot* muſt be tied to the *Fanons*, to keep the *Foot* in the ſame poſture.

Of the Fracture with Wounds.

If the *Leg* be *Fractured* with a great *Wound*, then you muſt apply the eighteen Headed Dreſſing, whereof this is the Figure.

After

After the *Wound* hath been Dreſt, the *Embrocation* made, and a long and narrow *Bolſter* applied to ſuck in the Matter, that the Dreſſing may be kept clean, you muſt ſpread the *Bandage* upon a *Pillow* and lay the *Leg* thereon.

You muſt begin by a plain and *Circulary Bolſter*, and then come to the eighteen Heads beginning to lift them up from below, the two firſt muſt make a *Chiaſmus*, obſerving ſtill to begin on that ſide where you finiſht laſt: When you have taken up twelve, that, is ſix on either ſide, you muſt apply two *Bolſters* longwiſe on the two ſides of the *Leg*, engaging them with thoſe ends that you are yet to take up, then the *Fanons* muſt be applied as in the *Fracture* without *Wound*; the *Bolſters* and other things muſt at firſt be dipt in *Oxycrat*, and ſome time after in red *Wine*.

Note that the eighteen Heads ought

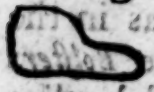
ought not to be of an equal length, the ſix firſt ought to be ſhorter, augmenting the reſt ſloping-wiſe, for what contains ought to be larger than what is contained.

Note alſo that ſome begin to take up by the Heads that are in the middle and upon the *Wound* firſt, thoſe below next, and laſtly thoſe that are above the *Wound*.

Rouling *and* Bolſtring *for* Diſlocations.

For the Diſlocation of the Nether Jaw.

AFter you have reduced the *Jaw*, you muſt apply upon it a *Plaiſter*, a *Compreſs*, and a piece of *Paſteboard* all of this Figure;

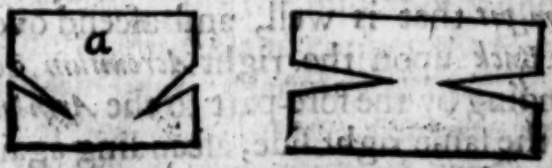


which ought not to be ſo long as in a *Fracture*, and ought to be applied ſomewhat higher, about the *Apophyſes*; the Dreſſing is made with a *Rouler* wound up with one or two Heads, as it is deſcribed in the

the Chapter of the *Fracture* of the *Nether Jaw*, wherefore the Reader is referred thereunto.

Of the Dislocations of the Humerus.

The *Plaister* and the *Bolster* must be of one of these Figures, that part which



is markt *a* in the first, ought to be applied near unto the *Neck*, and forget not to put a round Ball under the *Arm-pit* of the side, that is hurt, and a *Compress* under that which is well, then make the *Spica*, with one or two Heads.

The single Spica with one Head or End.

This Dressing is made with a *Rouler* eight or ten *Ells* long and four *Fingers* broad. If the *Dislocation* be on the right Side, you must apply the End of the *Rouler* under the left *Arm-pit*, carrying it over the right *Acromium*, coming

ing down over the fore-part under the ſore *Arm-pit*, and aſcending over the ſame *Acromium*, to make a *Chiaſmus* (or to ſpeak more properly the Figure of the Greek Letter X) with the other Head, obſerving to make this turn ſomething low, that one may convey the reſt upwards, and from the *Acromium* to deſcend over the *Breaſt* to the *Arm-pit* that is well, and aſcend over the *Back* upon the right *Acromium* deſcending by the fore-part to the *Arm-pit* of the ſame right ſide, aſcending again upon the *Acromium* to make a ſecond X a little above the other, conveying the *Rouler* afterwards under the left *Arm-pit*, aſcending again over the *Back*, to make as many *Spica*'s, as will be needful. Afterwards you muſt make the *Gyranium*, or *Circular* turn, conveying your *Rouler* from the left *Arm-pit*, over the *Back* upon the ſick *Acromium*, deſcending thence by the fore-part under the *Arm-pit* of the ſame ſide, making two turns on the upper part of the *Humerus*, the firſt lower, and the ſecond upon the Head of the *Bone*. Whence you muſt convey your *Rouler* over the

the *Breaſt*, under the left *Arm-pit*, and over the *Back* to come and make the Scarf.

The ſingle Spica with two Heads or Ends.

Having a *Rouler* of the ſame length and breadth as aforeſaid rouled with two Heads, apply the middle of it under the hurt *Arm-pit*, and convey the Heads on both ſides, changing *Hands* upon the *Acromium* to make a *Chiaſmus*, conducing them the one over the *Breaſt*, and the other over the *Back*, under the left *Arm-pit*, where you muſt make your *Roulers* change *Hands*, conducing them again over the *Acromium* of the ſick ſide, the one forward and the other over the *Back*, where let them change *Hands* again, and be conveyed under the *Arm-pit* of the ſame ſide, to be again changed and conveyed to the *Acromium*, repeating all theſe turnings as long as you ſhall think fit, obſerving in croſſing over the *Acromium* that the firſt Head you do apply ought to croſs with the laſt of the preceding circuit, finiſhing by the *Gyranium* and the Scarf.

The

The double Spica with a double Head.

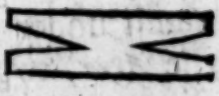
This Dreſſing might ſerve if a perſon had both *Humerus* diſlocated (as is frequent in thoſe that have had the *Strapado*) or but one, with a *Fracture* of the *Clavicul* of the other ſide, the *Roule* wherewith it is made ought to be eleven or twelve *Ells* long, and four *Fingers* broad, one muſt begin by the middle which is to be applied under the left *Arm-pit* (ſuppoſing the *Diſlocation* to be of that ſide) and the ends muſt be conveyed upon the *Acromium*, where changing *Hands*, they'l make a X. whence they muſt be carried under the right *Arm-pit*, croſſing them, and aſcending upon the *Acromium* of the ſame ſide, where they muſt change *Hands*, and carrying one over the broken *Clavicul*, the other over the *Back*, to come under the left *Arm-pit*, and changing *Hands* get to the left *Acromium*, where you muſt again change *Hands*, and thus continue as long as will be neceſſary. Obſerving only that the *Spica*'s for the *Diſlocations* of the *Humerus* ought

to

to be low, and those for the *Fracture* of the *Clavicul* ought to be made as high as may be, even near the *Neck*, finishing this Binding as the rest by the *Gyranium* and the Scarf.

Of the Dislocation of the Cubitus or Ell-Bone.

The *Cubitus* or *Ell-Bone* being reduced, the *Embrocation* must be made, applying afterwards a *Plaister* and a *Compress* of this Figure, and another longish *Compress*, that must go about the lower part of the *Humerus*, crossing in the fold of the *Elbow*, and finish turning about the upper part of the *Cubitus*, after which the Binding must be made, which is performed two several ways, either beginning on the *Elbow* it self, or on the lower part of the *Humerus*.



When it is begun in the inferior part of the *Humerus*, one must make three turns there, and descend, by the fold of the *Arm*, to make two turns on the upper part of the *Cubitus*, and of the *Shut-*

tle, afterwards one must ascend by the fold of the *Arm* to the lower part of the *Humerus*, to make two turns, and coming near to the *Elbow*, one must descend to make yet two turns on the upper part of the *Cubitus*, coming still nearer to the *Elbow*, and lastly they make but one turn above and below till all the *Olocranium* be covered.

The second way to make this Dressing is, when one begins upon the *Elbow* it self making there two Parallel turns, then one must avoid the *Olocranium*, making a turn above it, and as much under it, passing by the fold of the *Arm*, to go from the one to the other; repeating these turns three or four times, forsaking still the *Olocranium*, afterwards one must make two turns on the upper part of the *Elbow*, and passing by the fold of the *Arm*, one must also make two turns at the inferior part of the *Humerus*, ending the Dressing with a Binding expulsive.

For the Dislocation of the Wrist.

The *Plaister* and *Compress* for this part ought

ought to be long and ſtraight that they may conveniently turn about the *Wriſt*, and the Binding is made with a *Rouler* three *Fingers* broad and four or five *Ells* long; It is begun by making three or four round turns in the lower part of the *Ell* and *Shuttle-bone*, proceeding to the *Wriſt* and conveying the *Rouler* biaiſing over the *Metatarſe*, thence coming by the ſide of the leſſer *Finger* to paſs it between the *Thumb* and the *Fore-Finger*, then you muſt croſs the Palm of the *Hand*, and convey the *Rouler* over the *After-wriſt* to make a *Chiaſmus* with the other end, thence make again two or three turns about the *Wriſt*, and come ſloping upon the back of the *Hand*, as aforeſaid, finiſhing with an expulſive along the *Fore-Arm*.

For the Diſlocation of the Thumb.

The *Plaiſter* and the *Compreſs* muſt be cut near about this Figure, and the Binding is made with a *Rouler* two or three *Ells* long, and of the breadth of that

which is used in *Blood-letting*, one must make two or three turns about the *Wrist*, and conveying the *Rouler* under the upper part of the *Hand* come to the *Thumb*, and biaising upon it, make two turns about the end of it, coming down by the hollow of the *Hand* to make a turn about the *Wrist*, ascending afterwards upon the back of the *Hand* to come to the *Thumb*, making but one turn about it, a little below the former, returning over the *Muscle Thenar* to make yet one turn about the *Wrist* ascending afterwards to the *Thumb*, doing as aforesaid as long as will be needful. Observing that the *Spica's* may look towards the *Nail* of the *Thumb*, which will be easily done, if the turns be still made towards the root of the *Nail*, this Dressing ending about the *Wrist*.

For the Dislocation of the Femur.

Here is the Figure of the *Plaister* and *Bolster*, the sloping place, markt *a* is applied in the *Groin*, and

and the middle *c* covers the *Buttock*, in ſuch manner that the part *b* may reach to the ſlit of the *Fundament*, the Binding is either made with the *Spica*, or the *Cape*, or both together.

The Spica for the Diſlocation of the Femur.

To make this Dreſſing one muſt have a *Rouler* eight or nine *Ells* long, and five *Fingers* broad: You muſt apply the one end of it upon the left *Loin* (if the *Diſlocation* be on the right ſide) and convey the *Rouler* over the back to come and deſcend forwards by the right *Groin*, and aſcend upon the *facies* of the ſame ſide to make a *Chiaſmus* with the other caſt, conveying the *Rouler* over the *Belly* to the left *Loin*, you muſt begin thus many times conveying the *Rouler* from the left *Loin* over the *Back*, upon the *Head* of the *Femur*, to the right *Groin* aſcending backward to make a *Chiaſmus* a little above the former, and over the *Belly* to the left *Loin*, continuing ſtill in the like manner, as long as is needful, obſerving to convey your *Rouler* from below upwards, and

that

that the *Spica's* appear below, then you muſt make the *Gyranium* in this manner, carry the *Rouler* that comes from the *Back* to the right *Groin*, coming thence to make a firſt turn on the upper part of the *Thigh*, and another higher directly upon the Head of the *Femur*, finiſhing your Binding, by making two or three turns about the Body, to ſtrengthen it.

The Cape or Cloke for the Femur.

This Binding is made with a *Rouler* wound into two Heads of the ſame length and breadth as the former, you muſt apply the middle of the *Rouler* under the ſore *Thigh*, conveying the two Heads the one under the *Groin*, and the other by the fold of the *Buttock*, that of the *Groin* muſt go backward, and that from the back part forward, making a X as in the *Spica*, at the upper and external part of the *Femur*, near upon its Head, the Head that is forward and muſt make the over-turnings, muſt be held about the *Pubes*, whilſt that backward, ſhall be turned about the Body, en-

engaging the other, that was held at the *Pubes*, when it is engaged you'l overturn it to the *Groin*, and must ascend by the *Buttock*, where you must again engage it by means of the *Circulary*, and come down again by the same *Buttock*, to ascend by the same *Groin*, continuing thus to descend and ascend engaging your *Rouler*, till the *Thigh* and the *Buttock* be all covered, and you must finish your Dressing by a *Circulary* turn about the Body.

For the Dislocation of the Tibia from the Femur.

You must make your *Plaister* and your *Bolster* of the same Figure as that for the *Elbow*, applying them in the same manner, and over them two *Circulary Compresses*, as in the *Fracture* of the *Rotula*, that serve to fill the concavity of the *Ham*, and to Bind it, you must make the *Tortoise* described in the *Fracture* of the *Rotula*, the *Ascia* or a X or the two Headed *Chiasmus*.

The

The Aſcia or Hatchet for the Knee

You muſt make three turns in the lower part of the *Thigh*, and turn the *Rouler* by the *Ham*, to do ſo likewiſe on the upper part of the *Tibia*, then aſcend by the *Ham* to the *Femur*, making there two turns as you come near to the *Rotula*, and croſſing ſtill under the *Ham*, come and do the ſame on the *Tibia*, till the *Rotula* be quite covered. This Dreſſing is made like that of the *Elbow*.

The Chiaſte or Chiaſmus with two Heads.

Having a *Rouler* of five *Ells*, and three *Fingers* broad wound up in two Heads the middle muſt be applied above the *Rotula*, and the two heads are conveyed under the *Ham*, changing *Hands* and carrying them upon the *Rotula*, where you muſt make a *Chiaſmus* changing *Hands*, and then convey them under the *Ham*, aſcending upon the *Rotula*, coming nearer and nearer it, above and below, to cover the ſame, continuing to aſcend and deſcend as long as will be needful.

For

For the Dislocation of the Foot.

The *Rouler* ought to be as long and broad as the former, you must apply one Head of it about the outward *Ankle* conveying the *Rouler* cross-wise over the *Foot* to the inner *Ankle* and under the Plant of the *Foot*, ascending thence by the outside to cross the other Head upon the *Foot*, turning by the inward *Ankle*, as low as possible, toward the hinder part upon *Achilles Tendon*, returning by the outward *Ankle* over the *Foot*, to descend under its plant, coming still nearer to the *Heel*, and ascending upon the *Instep*, making there as many *Chiasmus* as shall be necessary, the *Spica* ought to appear in the lower part the Binding having been made from the lower part upward. Afterwards your *Rouler*, coming from the *Tendon* of *Achilles* unto the outward *Ankle*, must come down under the *Foot*, embrassing the outside of the *Heel*, and turning two turns over the *Instep*, without covering the *Spica*, ascend then and embrassing the inside of the *Heel*, as you have

have done the outside, turn about the *Leg*, and finish by making the *Ascia*.

This Dressing is well made when there appears four half *Lozanges*, one upon the *Neck* of the *Foot*, the second upon the *Instep*, and the two others above the *Ankles*.

The same Binding is also made proceeding downwards, and then the *Spica* appears above, the *Circumvolutions*, about the Plant of the *Foot*, come nearer and nearer to the *Toes*, and those that are made about the *Leg*, come near to the *Heel*, being made in this manner, it is fittest for the indispositions of the *Heel* and *Instep*.

And thus I Conclude this small Treatise wishing it may (as I doubt not but it will) be useful to all young Beginners, and other well-wishers to *Chirurgery*.

MVSEVM BRITANNICVM

FINIS.